



Pm-5



marantz®

Model Pm-5

Stereo Pre Main Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA

Superscope (Australasia) Pty., Ltd.
32 Cross Street (P.O. Box 604)
Brookvale 2100 N.S.W.
Australia

JAPAN

Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara Shi
Kanagawa, Japan

EUROPE

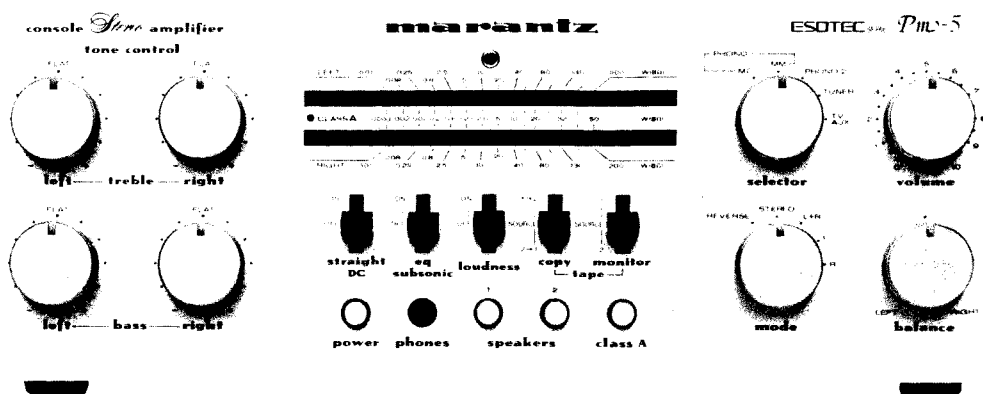
Marantz Europe, S.A.
Avenue Leopold III, 2
7120 Perennes-Lez-Binche
Belgium

Marantz France
Rue Louis Armand 9
92600 Asnieres
Hauts-de-Seine
France

Marantz Audio U.K. Ltd.
London Road, 203
Staines
Middlesex
England

Marantz GmbH
Max-Planck-Strasse 22
D-6072 Dreieich 1
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.



◇特 長

■MCヘッドアンプ(7石構成)

初段はNPN超ローノイズトランジスタと、PNP超ローノイズトランジスタを組合わせたものとでプッシュプル構成とし、さらに2段目の増巾段もプッシュプル構成とし、出力段は十分に電流を流したSEPP構成の片チャンネル当り7石のトランジスタを使用した本格的なMCヘッドアンプです。特にS/Nを改善するため、フィードバック回路のインピーダンスを徹底的に小さくしています。定格入力 $220\mu\text{V}$ で、電圧利得は10倍(20dB)となっています。

■PHONOアンプ

このPHONOアンプはTIM歪の低減と高S/Nを実現するために、マランツ独特の11石構成の完全全段プッシュプル回路にしています。

初段はNチャンネル、Pチャンネルの超ローノイズ、ハイGmのFETをプッシュプルに組合わせ、さらにカスコードブートストラップ回路を使用し入力段のインピーダンス変化による特性悪化を防止しています。

次段は段間エミッターフォロアーによるバッファアンプを通り、2段目プッシュプル電圧増巾段に入ります。

さらに出力段はどのような負荷にでも十分にドライブすることのできるSEPP回路とし、S/Nを改善するためのイコライザ素子のインピーダンスも従来のものに比べ十分低くし、定格入時のS/Nも86dBを達成しています。

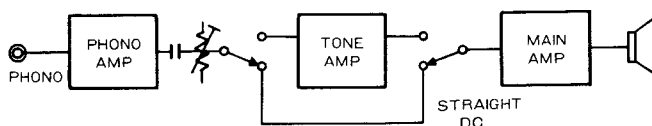
また、イコライザ素子には誤差1%以内の金属被膜抵抗と、2%以内のポリプロピレンコンデンサを使用し、20Hz~20kHz以内でのRIAA偏差を0.2dB以内に抑えています。

さらに、ターンテーブルのゴロやフラッターを取り除くために、出力部にはEQ Subsonicフィルターを入れています。

■STRAIGHT DC スイッチ

PHONOアンプの出力を直接メインアンプに送り込むことによって、段間のカップリングコンデンサを1つだけにすることができます。

このスイッチを操作することによってSTRAIGHT DC/TONE INの動作状態を選ぶことができます。なお、各動作でのゲインおよび入力感度の変化はありません。



■メインアンプ

STRAIGHT DC動作をさせるために入力感度は150mVで出力80W(8Ω、クラスAB)を得られるゲインを持っています。完全DCアンプとしてはマランツ独特の回路方式を採用し、TIM歪の低減とDCサーボ回路によるDCドリフトの低減に万全を期しています。

電圧増巾段(Voltage Amp)

入力段はペアー特性の良いデュアルFETによるソースフォロアーアンプを使用し、入力段のインピーダンス変化による特性悪化を防いでいます。インピーダンスを下げた信号はデュアルトランジスタによる差動アンプで増巾されますが、この負荷にもまたデュアルトランジスタを使った能動バランス負荷回路を使用しています。

差動出力の片側は位相反転し、それぞれの差動出力は段間エミッターフォロアーによるバッファアンプを通して2段目のプッシュプル増巾段に入ります。

電力増巾段(Power Output)

電力増巾段にはリニアリティの優れたパワートランジスタを並列接続した3段ダーリントン方式の出力段になっているため、バイアス電流および出力供給電圧を切換えることにより純クラスA 20W(8Ω)とクラスAB 80W(8Ω)を切換えることができます。

メインアンプとしてはマランツ独特のプッシュプル増巾により、オープンループ特性の改善とマランツ独自の2ポール位相補正回路により高周波領域まで歪の少ない波形伝送とTIM歪の低減を徹底的に進めた回路方式を採用しています。

■LED使用による12ポイントピークパワーメーター

高級パワーアンプにふさわしく、出力レベルのチェックができるLEDによるピークパワーメーターを装備しています。このパワーメーターは対数圧縮指示の回路方式を用いているので、小出力から大出力までをレンジ切換なしにモニターすることができます。

◇調整方法

●バイアス電流調整

- (1)CLASS B (フロントパネルのCLASSⒶのスイッチをOFFにする)

調整個所 RT11、12 (1 KΩ)

入 力 —————

出 力 8 Ω (LOAD)

測定個所 Lch TP1～TP2間、Rch TP4～TP5間にデジタルボルトメーターを接続し端子電圧が安定する(約30秒～1分)まで待ち、その後14mVになるようRH07、RH08を調整します。

- (2)CLASS A (フロントパネルCLASSⒶのスイッチをONにする)

調整個所 RT07、08(4.7 KΩ)

入 力 —————

出 力 8 Ω (LOAD)

測定個所 Lch TP1～TP2間、Rch TP4～TP5間にデジタル、ボルトメーターを接続し端子電圧が安定する(約30秒～1分)まで待ち、その後260mVになるようRT07、RT08を調整します。

●ピークパワーメータの調整

調整個所 RX09、RX10(1KΩ)

入 力 AUX

出 力 8 Ω (LOAD)

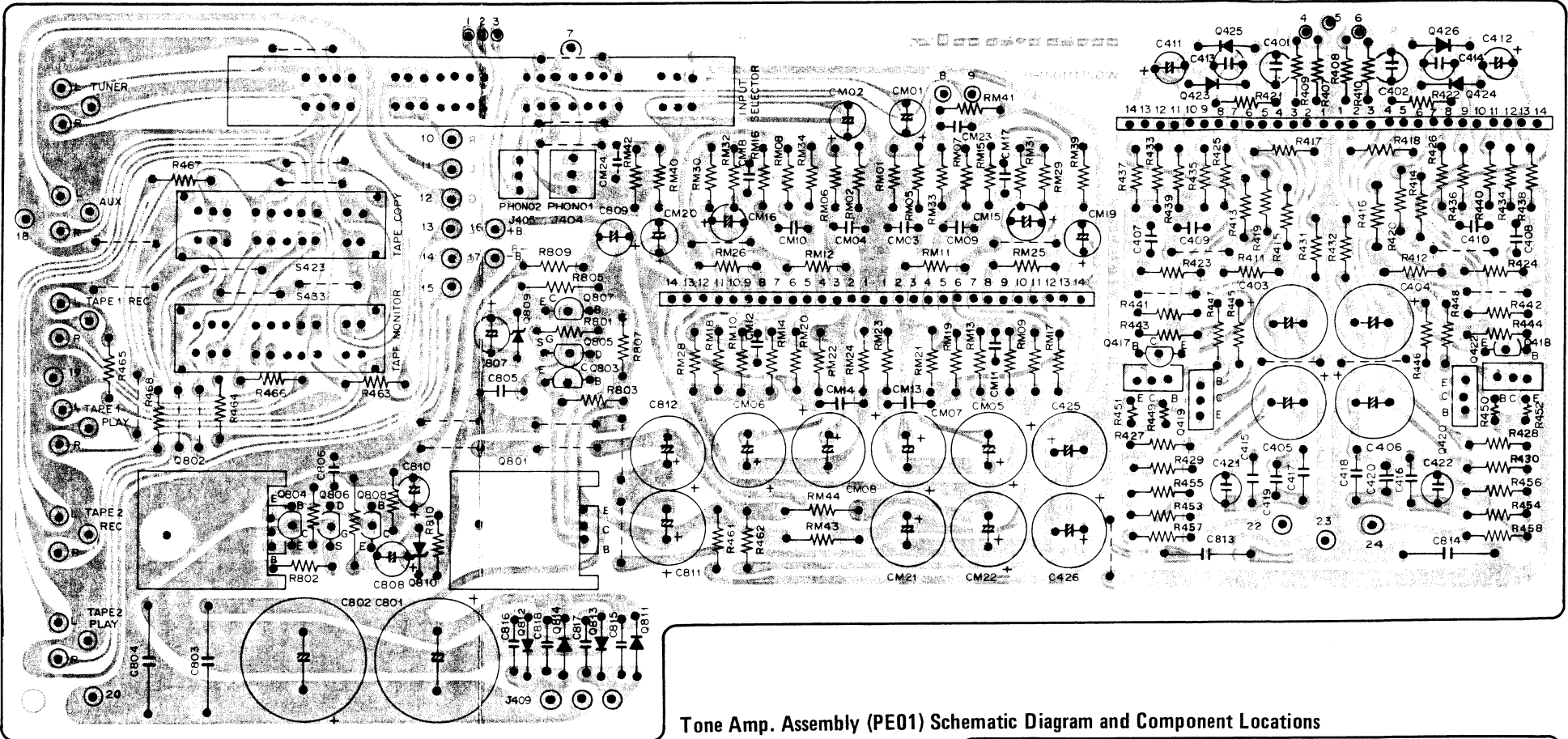
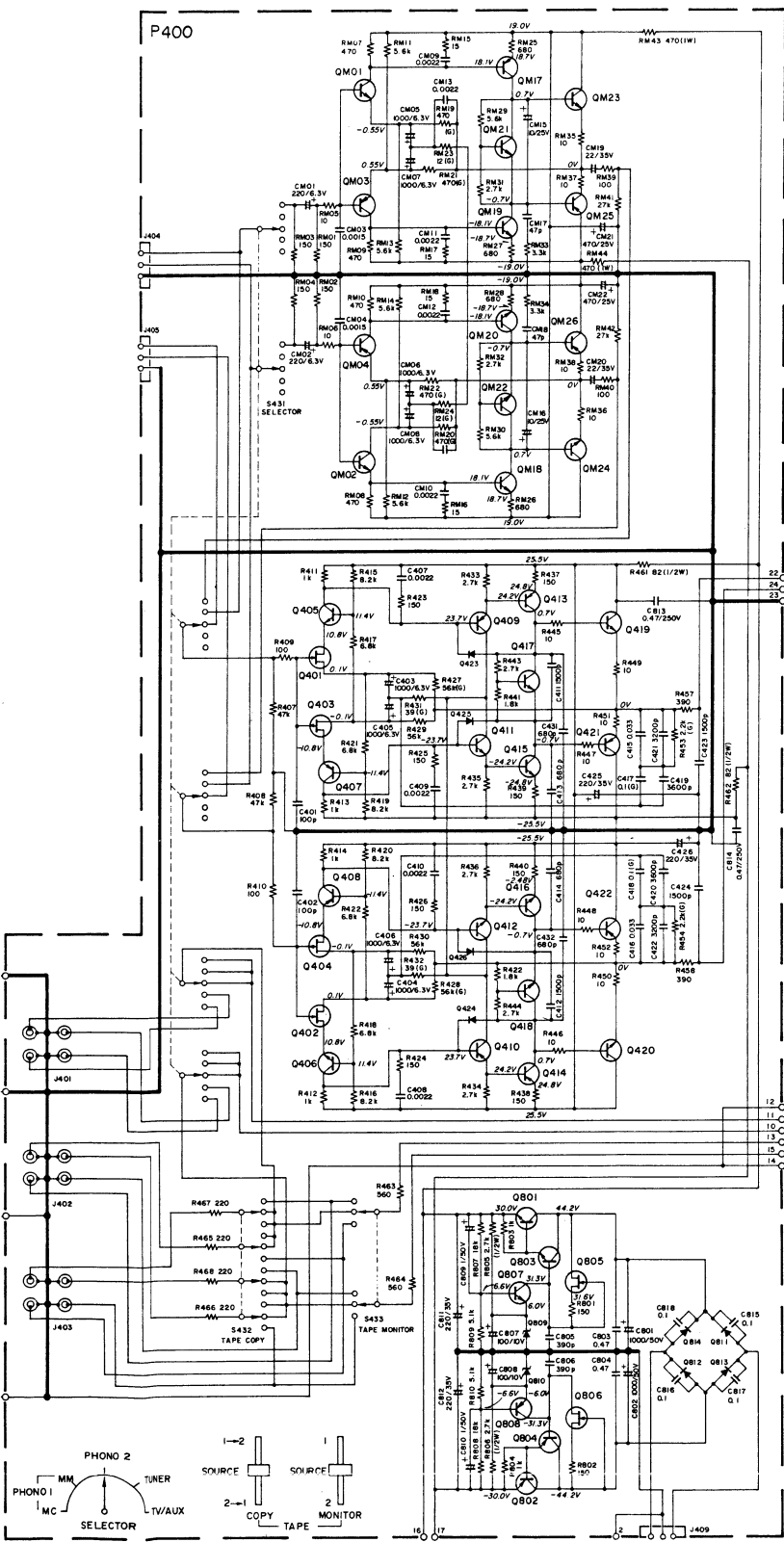
調整方法 8 Ω 負荷50W出力時に40W表示のLEDと80W表示のLEDが両方点灯するようにRX09、RX10を調整する。

◇ サービスに必要な測定器

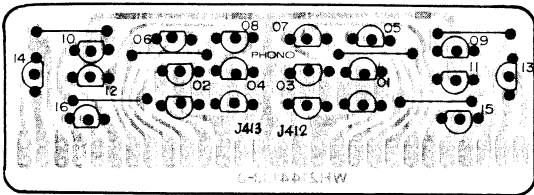
項 目	使 用 法
歪 率 計	アンプ出力の歪と電圧を測定する。
低 周 波 発 振 器	正弦波および矩形波の信号源として使用する。
オ ッ シ ロ ス コ ー プ	波形分析およびトラブル・シューティングに使用する。
V T V M	電圧および抵抗値の測定に使用する。
交 流 ワ ッ ト ・ メ ー タ ー	アンプの一次側消費電力をモニターする。
電 源 電 圧 計	アンプの一次側電源電圧をモニターする。
ス ラ イ ダ ッ ク (0～140 V A C, 10 A)	アンプの一次側電圧を調節する。
シ ョ ー ト 用 プ ラ グ	雑音を拾わないようにアンプ入力を短絡するのに使用する。
出 力 負 荷 抵 抗 (8Ω±0.5%, 250 W)	アンプの出力に8Ωの負荷を与える。
出 力 負 荷 抵 抗 (4Ω±0.5%, 250 W)	アンプの出力に4Ωの負荷を与える。

回路図と基板

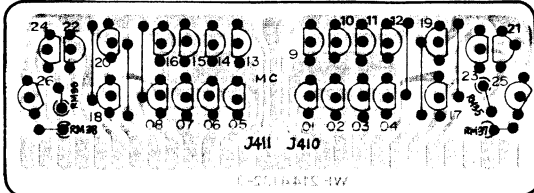
Pre Amp. Assembly (P400) Schematic Diagram and Component Locations



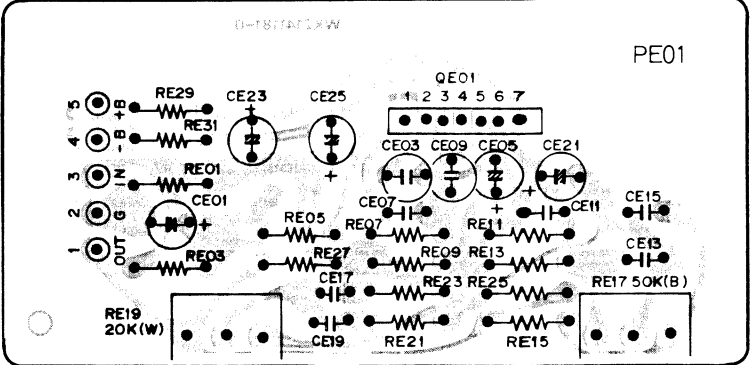
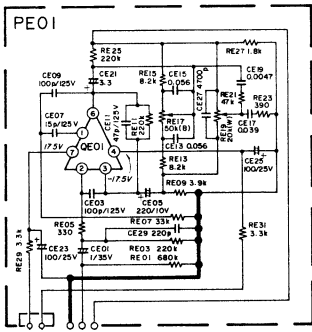
MM Transistor Block Assembly (P401)
Schematic Diagram and Component Locations



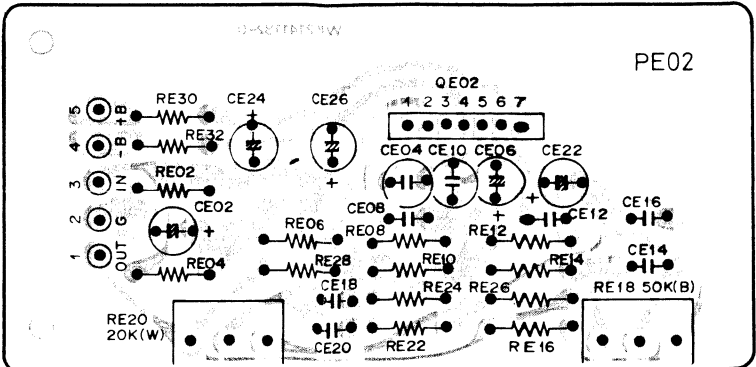
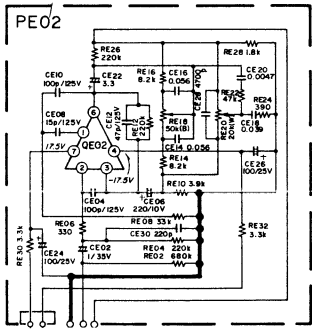
MC Transistor Block Assembly (PM01)
Schematic Diagram and Component Locations



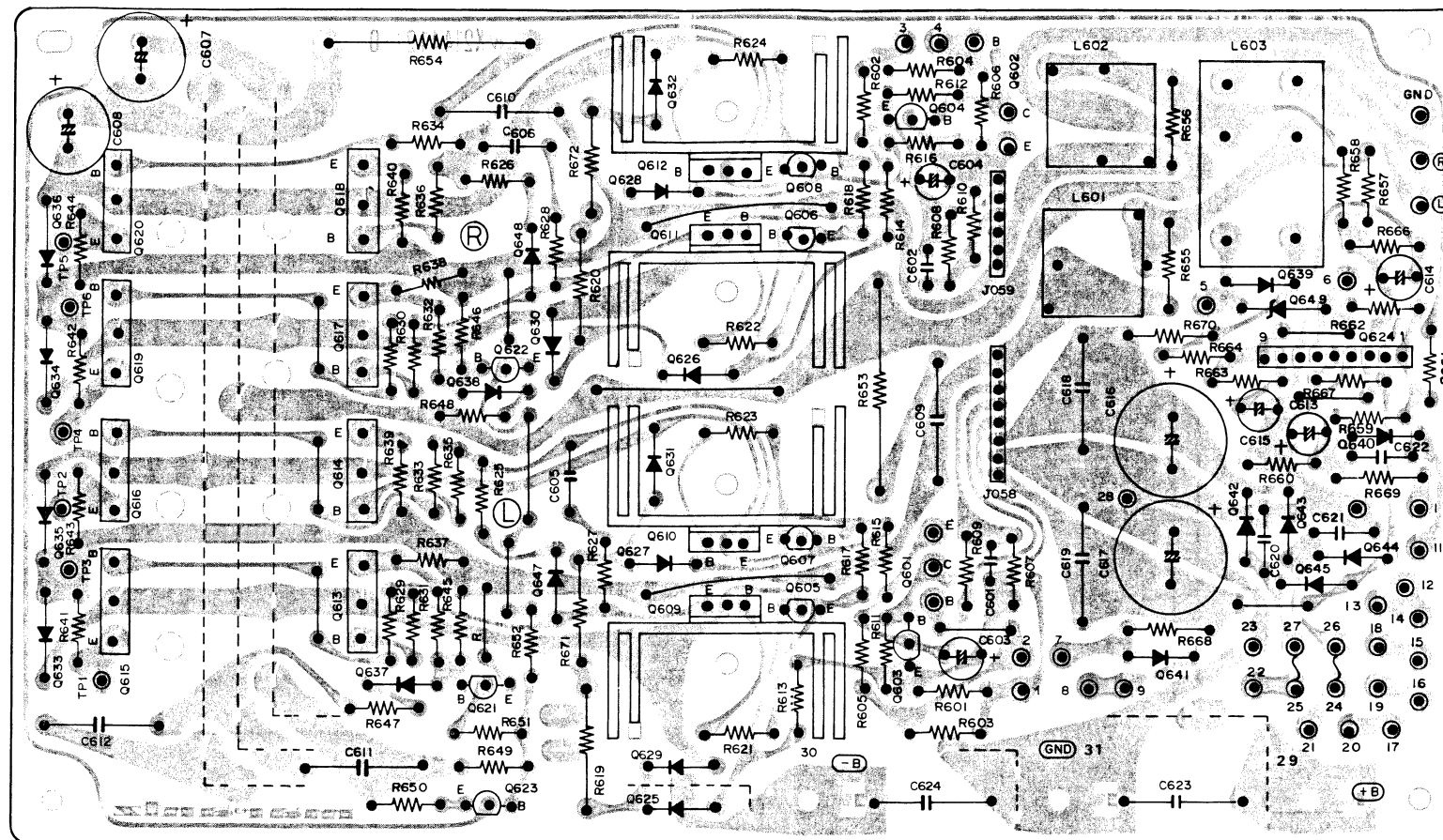
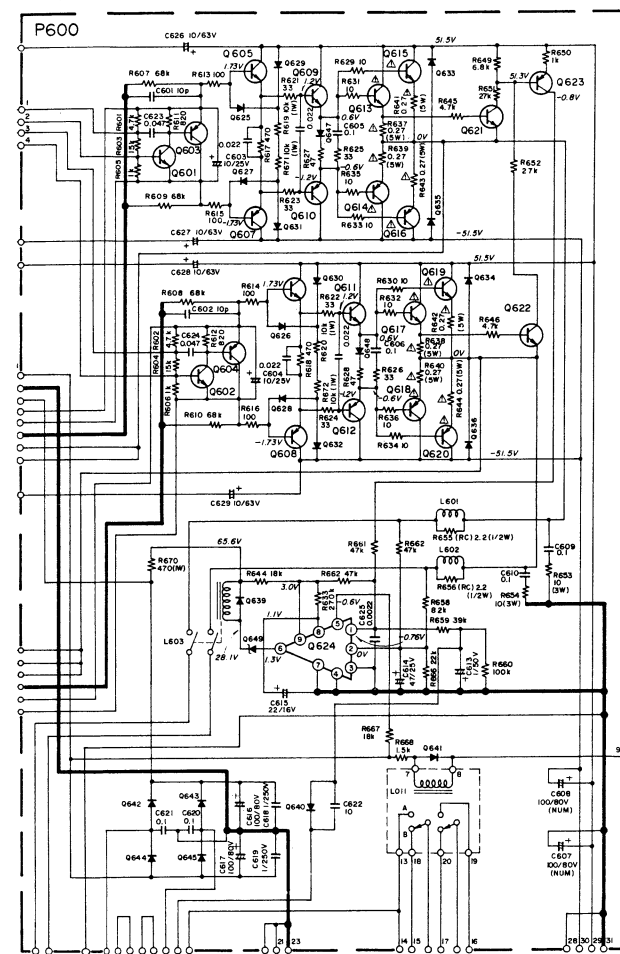
Tone Amp. Assembly (PE01) Schematic Diagram and Component Locations



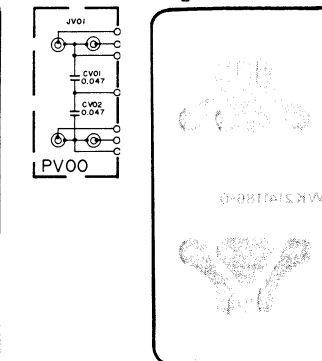
Tone Amp. Assembly (PE02) Schematic Diagram and Component Locations



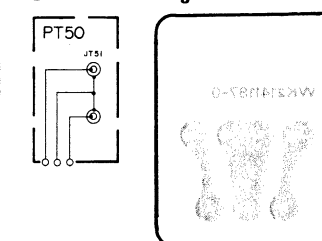
Output Amp. Assembly (P600) Schematic Diagram and Component Locations



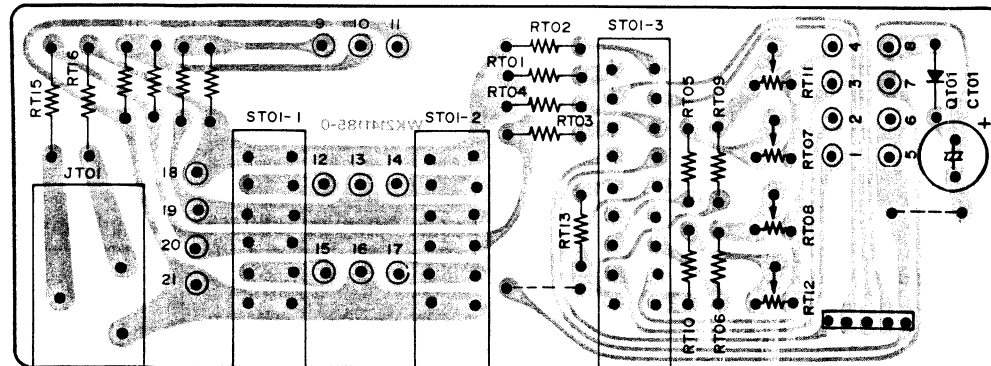
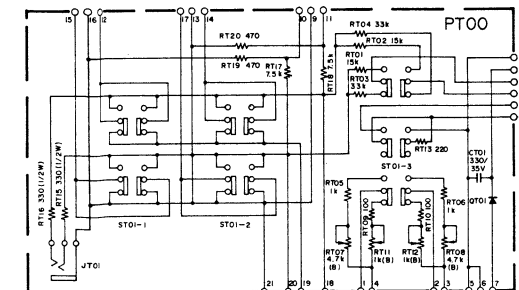
Phono Input Assembly (PV00) Schematic Diagram and Component Locations



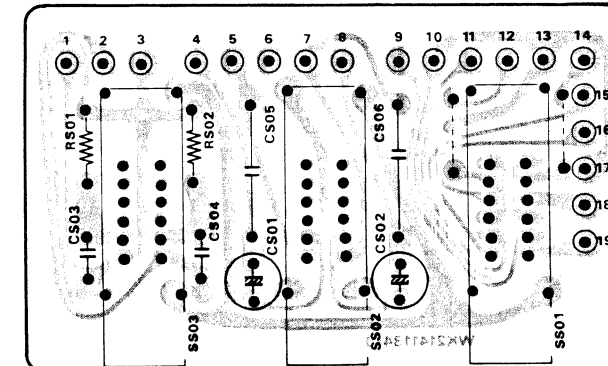
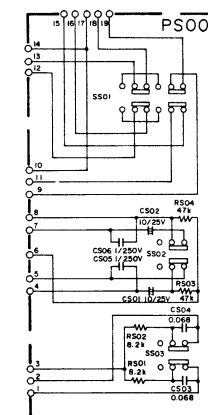
Pre Out Assembly (PT50) Schematic Diagram and Component Locations



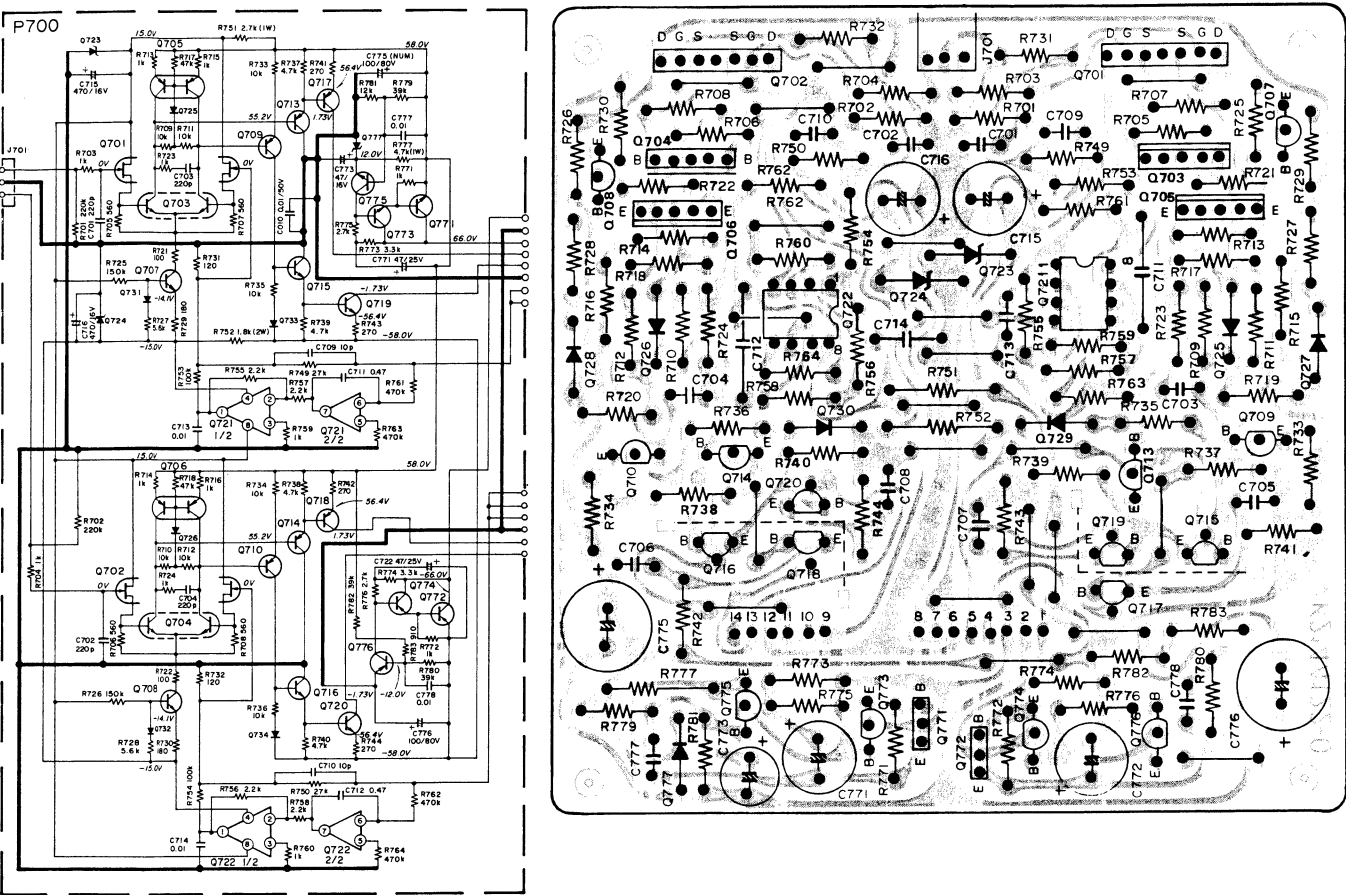
Speaker Switch Assembly (PT00) Schematic Diagram and Component Locations



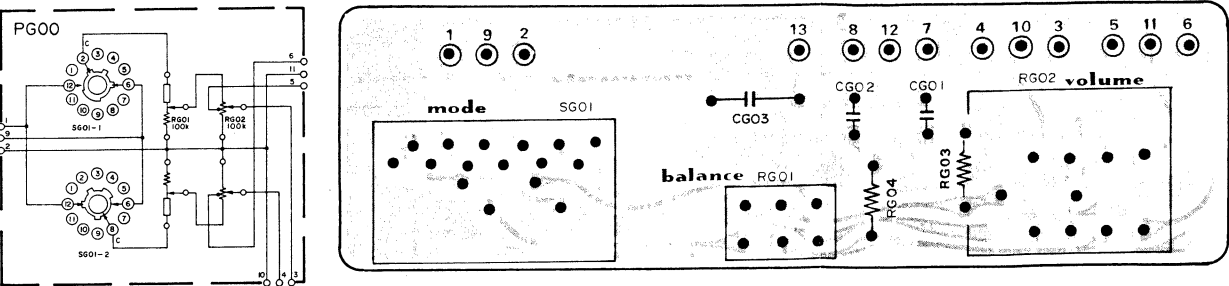
Lever Switch Assembly (PS00) Schematic Diagram and Component Locations



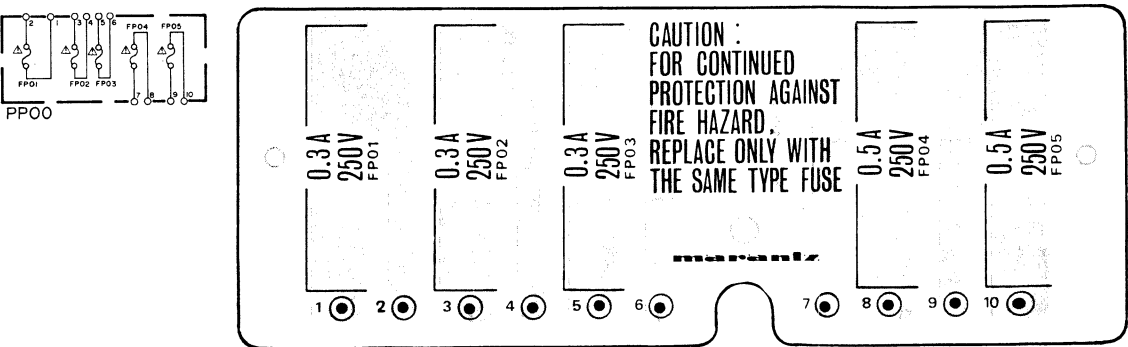
Voltage Amp. Assembly (P700) Schematic Diagram and Component Locations



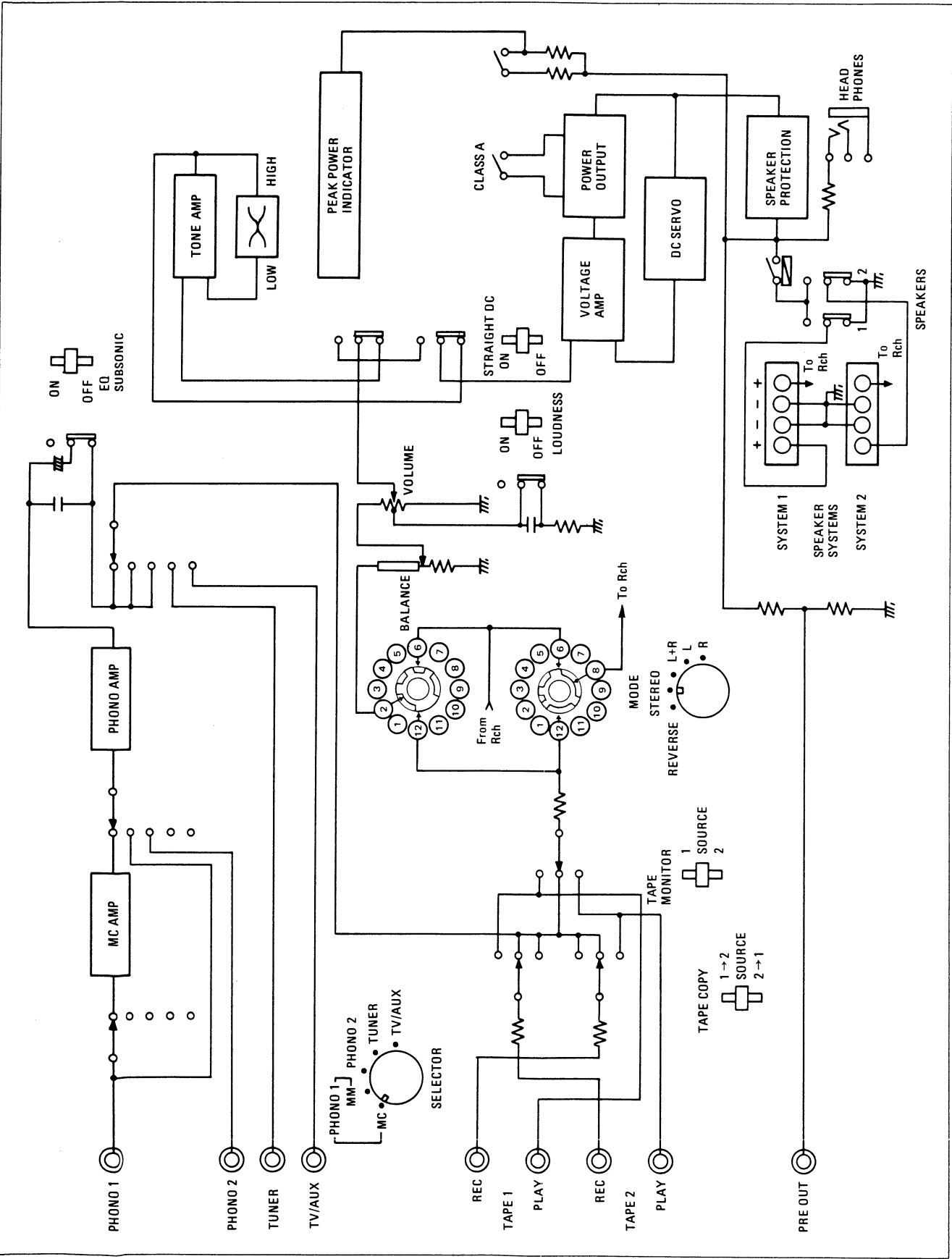
Balance Control Assembly (PG00) Schematic Diagram and Component Locations



Fuse Assembly (PP00) Schematic Diagram and Component Locations

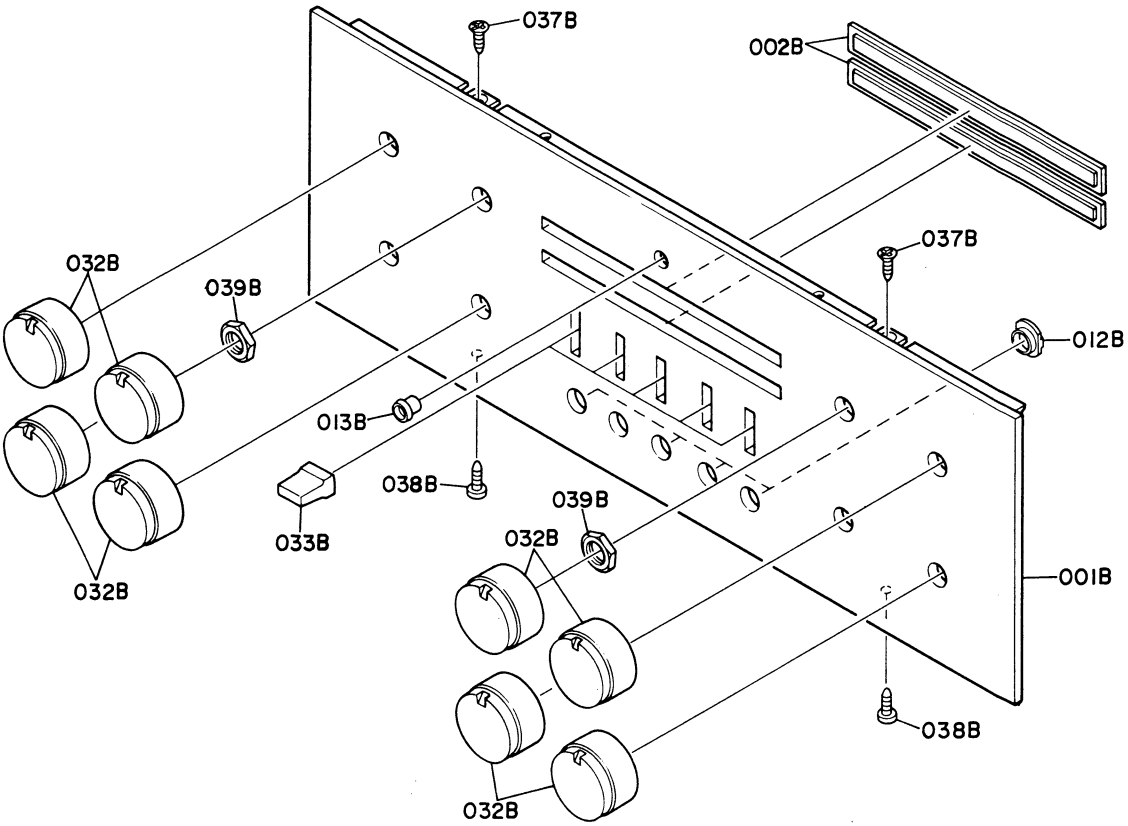


◇ブロックダイアグラム



◇分解及び部品表

● Front Panel (C01-99)



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
A	1	2141063400	Front Panel Assembly
001B	1	2141063010	Escutcheon, Front Panel
002B	2	2142158010	Window, Power LED
012B	4	2978259010	Bushing, Push Switch
013B	1	2462259010	Bushing, LED

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
032B	8	2462154260	Knob
033B	5	2144154010	Knob, Lever Switch
037B	2	51340306B0	F.H. Tapped Screw F3 x 6
038B	2	51280308U0	B.H. Tapped Screw B3 x 8
039B	2	53118129G0	Hexagon Nut

Model Pm-5 (F)

Model Pm-5 (E, P)

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY E	P	PART NO.	DESCRIPTION
001D	1	2416257010	Lid, Top Cover	001D	1		201H257010	Lid, Top Cover
004D	4	5126030820	B.H. Tapped Screw B3 x 8	004D	4		51280308U0	B.H. Tapped Screw B3 x 8
005D	1	2144861010	Label	005D	1		201H861010	Label
006D	4	5148040629	F. Washer Screw 4 x 6	006D	4		51100425S9	B.H.M. Screw 4 x 25
				016D	1		201H064010	Case Side Wood L
				017D	1		201H064020	Case Side Wood R
				018D	4		3906259010	Bushing
				019D	2		2140115010	Spring
				020D	4		51543110S0	F.H. Wood Screw
				021D	1		2932861010	Label
				022D	1		2578861010	Label
001E	1	2141160210	Bracket, Rear Panel	001E	1		2141160230	Bracket, Rear Panel
005E	1	1455259090	Bushing	001E	1		2144160220	Bracket, Rear Panel
008E	1	62030029W0	Lug	005E	1		1455259040	Bushing
				008E	1		62040029W0	Lug
				012E	1		201H053030	Cover
				013E	2		51280308U0	B.H. Tapped Screw B3 x 8
				014E	2		51280308U0	B.H. Tapped Screw B3 x 8
				056L	3		62031240W0	Lug
				901R	1		2461861030	Label
				902R	1		2461861030	Label
				903R	1		2461861020	Label
001S	1	2141801010	Packing Case	001S	1		2141801040	Packing Case
005S	1	2864804010	Sleeve	002S	1		2141801030	Packing Case
007S	1	2141851110	Instructions	007S	1		2141851310	Instructions
010S	1	9631000110	Guarantee Card	008S	2		2139809040	Cushion
012S	2	9526019040	Serial No. Card	012S	2		9526019060	Serial No. Card
				012S	3		9526019050	Serial No. Card
013S	1	2976813020	Envelope	013S	1		2713813010	Envelope
014S	1	2976851040	Instructions	014S	1		2818854010	Guarantee Card
				015S	1		9650000010	S. Station Card
				016S	1		2112265010	Indicator
018S	1	9650000030	S. Station Card	018S	1		2141851020	Instructions
				019S	1		2918107310	Sheet
020S	1	2144807010	Reinforcing	020S	1		2144807010	Reinforcing
				020S	1		YJ04000240	Jack
				030S	1		2731821010	Silicagel
				031S	1		2141856010	Circuit Diagram
				032S	1		2141851020	Instructions
J416	1	YP01001040	Plug (3P)	J416	1		YJ06001240	Jack
FP01	5	FS10050080	Fuse 0.5A 250V	FP01	5		FS10100090	Fuse 1A 250V
FP05	1	FS10500060	Fuse 5A 250V	FP05	1		FS10500060	Fuse 2.5A 250V
F001	1	FS10500060	Fuse 5A 250V	F001	1		FS10250040	Fuse 2.5A 250V
GU01	1	BF10400030	Cap. Comp. 0.1μF +120Ω	GU01	1		BF10400060	Cap. Comp.
				GU01	1		BF10400020	Cap. Comp.
				J024	1		BY05080010	4-Voltage Selector
L001	1	TS60508010	Power Transformer	L001	1		TS19614020	Power Transformer
W001	1	YC02400180	A.C. Power Cord	W001	1		YC01900030	A.C. Power Cord
				W001	1		YC02400180	A.C. Power Cord
C711	1	DF16474510	Film 0.47μF ±10%	C711	1		DF16105530	Film 1μF
C712	1	DF16474510	Film 0.47μF ±10%	C712	1		DF16105530	Film 1μF
C771	1	EA47602530	Elect 47μF 25V					
C772	1	EA47602530	Elect 47μF 25V					
C775	1	EA10706390	Elect 100μF 63V	C775	1		EA10708050	Elect 100μF 80V
C776	1	EA10706390	Elect 100μF 63V	C776	1		EA10708050	Elect 100μF 80V

Model Pm-5 (F)

Model Pm-5 (E, P)

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY E	P	PART NO.	DESCRIPTION
R733	1	GD05103140	10KΩ 1/4W	R733	1		GD05472140	4.7KΩ 1/4W
R734	1	GD05103140	10KΩ 1/4W	R734	1		GD05472140	4.7KΩ 1/4W
R735	1	GD05103140	10KΩ 1/4W	R735	1		GD05472140	4.7KΩ 1/4W
R736	1	GD05103140	10KΩ 1/4W	R736	1		GD05472140	4.7KΩ 1/4W
R761	1	GD05474140	470KΩ 1/4W	R761	1		GD05334140	330KΩ 1/4W
R762	1	GD05474110	470KΩ 1/4W	R762	1		GD05334140	330KΩ 1/4W
R763	1	GD05474140	470KΩ 1/4W	R763	1		GD05334140	330KΩ 1/4W
R764	1	GD05474140	470KΩ 1/4W	R764	1		GD05334140	330KΩ 1/4W
C603	1	EA10602530	Elect 10μF 25V	C603	1		EA10703540	Elect 100μF 35V
C604	1	EA10602530	Elect 10μF 25V	C604	1		EA10703540	Elect 100μF 35V
C616	1	EA22708020	Elect 220μF 80V	C616	1		EA22708050	Elect 220μF 80V
C617	1	EA22708020	Elect 220μF 80V	C617	1		EA22708050	Elect 220μF 80V
				C618	1		DF16105530	Film 1μF
				C619	1		DF16105530	Film 1μF
				C623	1		DF16473350	Film 0.047μF 50V
				C624	1		DF16473350	Film 0.047μF 50V
				L602	1		LJ28115090	Coil
R617	1	GG05102140	1KΩ 1/4W	R617	1		GG05471140	470Ω 1/4W
R618	1	GG05102140	1KΩ 1/4W	R618	1		GG05471140	470Ω 1/4W
CX06	1	EA10702530	Elect 100μF 25V	CX06	1		EA22602530	Elect 22μF 25V
				CX07	1		EA33702530	Elect 330μF 25V
RX04	1	GA05101010	100Ω 1W	RX04	1		GA05820010	82Ω 1W
CM19	1	EA22602590	Elect 22μF 25V	CM19	1		EQ22602520	Elect 22μF 25V
CM20	1	EA22602590	Elect 22μF 25V	CM20	1		EQ22602520	Elect 22μF 25V
CM21	1	EA47701690	Elect 470μF 16V	CM21	1		EA47702530	Elect 470μF 25V
CM22	1	EA47701690	Elect 470μF 16V	CM22	1		EA47702530	Elect 470μF 25V
C411	1	EA10602530	Elect 10μF 25V	C411	1		DF17152300	Film 1500pF 50V
C412	1	EA10602530	Elect 10μF 25V	C412	1		DF17152300	Film 1500pF 50V
C421	1	DF64322010	Film 3200pF ±2%	C421	1		DF65322010	Film 3200pF
C422	1	DF64322010	Film 3200pF ±2%	C422	1		DF65322010	Film 3200pF
				C431	1		DF55681090	Film 680pF 50V
				C432	1		DF55681090	Film 680pF 50V
CT01	1	EA33703530	Elect 330μF 35V	CT01	1		EA10803530	Elect 1000μF 35V
JT01	1	YJ01001340	Jack, Headphone	JT01	1		YJ01001400	Jack, Headphone
QT01	1	HD20015030	Diode DS135-D	QT01	1		HD20025100	Diode 10DF-21A
CE01	1	EA47503530	Elect 4.7μF 35V	CE01	1		EA10505030	Elect 1μF 50V
CE02	1	EA47503530	Elect 4.7μF 35V	CE02	1		EA10505030	Elect 1μF 50V
CE05	1	EA47601030	Elect 47μF 10V	CE05	1		EA22701030	Elect 220μF 10V
CE06	1	EA47601030	Elect 47μF 10V	CE06	1		EA22701030	Elect 220μF 10V
CE21	1	EA47503530	Elect 4.7μF 10V	CE21	1		EA33505030	Elect 3.3μF 50V
CE22	1	EA47503530	Elect 4.7μF 10V	CE22	1		EA33505030	Elect 3.3μF 50V
				CE27	1		DF17472300	Film 4700pF 50V
				CE28	1		DF17472300	Film 4700pF 50V
				CE29	1		DF55221090	Film 220pF 50V
				CE30	1		DF55221090	Film 220pF 50V
RE07	1	GD05331140	330Ω 1/4W	RE07	1		GD05333140	33KΩ 1/4W
RE08	1	GD05331140	330Ω 1/4W	RE08	1		GD05333140	33KΩ 1/4W
CV01	1	DK18473320	Ceramic Cap. 0.047μF	CV01	1		DK18473310	Ceramic Cap. 0.047μF
CV02	1	DK18473320	Ceramic Cap. 0.047μF	CV02	1		DK18473310	Ceramic Cap. 0.047μF
C003	1	DF17104520	Film Cap. 0.1μF 200V	C003	1		DF17103510	Film Cap. 0.01μF 200V
C004	1	DF17104520	Film Cap. 0.1μF 200V	C004	1		DF17103510	Film Cap. 0.01μF 200V
C005	1	DF17104520	Film Cap. 0.1μF 200V	C005	1		DF17103510	Film Cap. 0.01μF 200V
C006	1	DF17104520	Film Cap. 0.1μF 200V	C006	1		DF17103510	Film Cap. 0.01μF 200V
				C007	1		DK18473320	Ceramic Cap. 0.047μF
				C008	1		DK18473320	Ceramic Cap. 0.047μF

Model Pm-5 (F)

Model Pm-5 (E, P)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION	REF. DESIG.	Q'TY		PART NO.	DESCRIPTION
	F				E	P		
				C009	1	1	DK18473320	Ceramic Cap. 0.047 μ F
				C017	1	1	EA10708050	Elect 100 μ F 80V
				C018	1	1	EA10708050	Elect 100 μ F 80V
C626	1	EA10606390	Elect Cap. 10 μ F 63V					
C627	1	EA10606390	Elect Cap. 10 μ F 63V					
C628	1	EA10606390	Elect Cap. 10 μ F 63V					
C629	1	EA10606390	Elect Cap. 10 μ F 63V					
				C635	1	1	EA10606390	Elect Cap. 10 μ F 63V
				C636	1	1	EA10606390	Elect Cap. 10 μ F 63V
				C637	1	1	EA10606390	Elect Cap. 10 μ F 63V
				C638	1	1	EA10606390	Elect Cap. 10 μ F 63V
				C661	1	1	DF16223300	Film Cap. 0.022 μ F 50V
				C662	1	1	DF16223300	Film Cap. 0.022 μ F 50V
				C663	1	1	DF16223300	Film Cap. 0.022 μ F 50V
				C664	1	1	DF16223300	Film Cap. 0.022 μ F 50V
				P400	1		WG21410010	P.W. Board, Pre Amp
					1		ZZ21418040	P.W. Board Assembly
				P401	1		WH21441330	P.W. Board, MM TR
					1		ZZ21441330	P.W. Board Assembly
				P600	1		WK21441210	P.W. Board, Output Amp
					1		ZZ21441210	P.W. Board Assembly
				P700	1		WK21441220	P.W. Board, Voltage Amp
					1		ZZ21441220	P.W. Board Assembly
				PE01	1		WK21411810	P.W. Board, Tone Amp (L)
					1		ZZ21411810	P.W. Board Assembly
				PE02	1		WK21411820	P.W. Board, Tone Amp (R)
					1		ZZ21411820	P.W. Board Assembly
				PG00	1		WH21441310	P.W. Board, Mode Balance
					1		ZZ21441310	P.W. Board Assembly
				PM01	1		WK21441320	P.W. Board, MC TR.
					1		ZZ21441320	P.W. Board Assembly
				PP00	1		WF21440010	P.W. Board, Fuse
					1		ZZ21440010	P.W. Board Assembly
				PS00	1		WK21411840	P.W. Board, Lever SW
					1		ZZ21411840	P.W. Board Assembly
				PT00	1		WK21411850	P.W. Board, SPK SW
					1		ZZ21411850	P.W. Board Assembly
				PU00	1		WK21411880	P.W. Board, Power SW
					1		ZZ21411880	P.W. Board Assembly
				PV00	1		WK21411860	P.W. Board, Phono Input
					1		ZZ21411860	P.W. Board Assembly
				PX00	1		WK21411830	P.W. Board, Peak Ind.
					1		ZZ21411830	P.W. Board Assembly

TECHNICAL SPECIFICATIONS

AUDIO SECTION

Rated Power Output (20 Hz to 20 kHz, both channels driven)	80W x 2 (8Ω Load) Class AB 20W x 2 (4Ω Load) Class A
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Power Bandwidth (8Ω Load, THD 0.05%) 5 Hz to 90 kHz

THD (20 Hz to 20 kHz, 8Ω Load)	0.015%
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I.M. Distortion	0.015%
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Frequency Response (20 Hz to 20 kHz)	+0, -0.2 dB
(+1, -1 dB)	5 Hz to 100 kHz

Damping Factor (8 ohms Load) 100

Input Sensitivity and Impedance (at MAIN IN)

Phono 1 (MM) 2.2 mV/47 k Ω

Phono 1 (MC)	220 $\mu\text{V}/75\Omega$
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Phono 2 (MM) 2.2 mV/47 kΩ

High Level 150 mV/40 k Ω

Frequency Response, RIAA 20 Hz to 20 kHz ± 0.2 dB

Equivalent Input Noise (Phono, IHF-A) 0.24 μ V

Signal-to-Noise Ratio (IHF-A Network)

Phono (MM) 86 dB

Phono (MC) 68 dB

TAPE/TUNER/AUX 110 dB

Phono MAX Input Voltage, 1 kHz

Phono (MM) 220 mV

Phono (MC) 20 mV

Tone Control Response

Bass Range 100 Hz ± 8 dB

TREBLE Range 10 kHz ± 8 dB

GENERAL

Power Requirements	110/120/220/240 V AC, 50/60 Hz
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Power Consumption	200 W
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Dimensions

Panel Width 16-3/8" (416 mm)

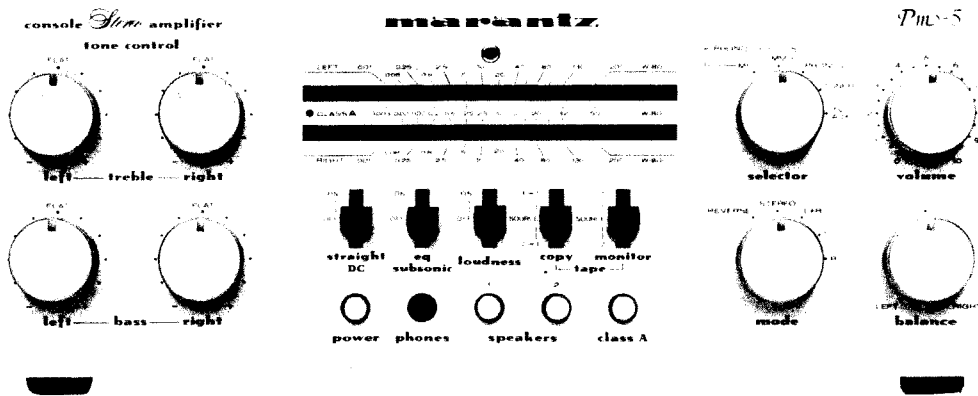
Panel Width	5-1/2" (140 mm)
Panel Height	5-3/4" (146 mm)

Depth..... 13-1/16" (332 mm)

Weight

Unit alone 28 lbs 6 oz (13 kg)

MARANTZ MODEL Pm-5 STEREO PRE MAIN AMPLIFIER



FEATURES

● MC HEAD amplifier

The first stage uses super-low noise NPN and PNP transistors in a push-pull circuit. The second stage is also a push-pull circuit. The output stage is a high gain SEPP amplifier with 7 transistors per channel. The feedback circuit has a very low impedance, thus improving the S/N. With this design, this MC head amplifier provides a high voltage gain (20 dB) at its rated input of 220 μ V.

● PHONO amplifier

The PHONO amplifier is a unique Marantz full-stage push-pull circuit using 11 transistors that ensures low TIM distortion and high S/N. The first stage uses super-low noise, high Gm FETs in push-pull connection (N and P channels) and a cascode boost trap circuit to prevent the deterioration of characteristics due to changes in input impedance.

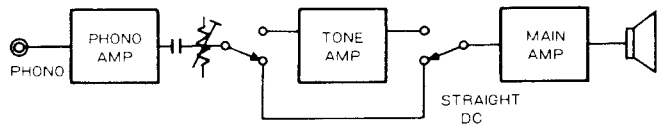
The PHONO signal is fed through the emitter follower buffer amplifier to the push-pull voltage amplifier in the second stage.

The output stage is an SEPP circuit having sufficient driving ability. The equalizer circuit has a very low impedance so that the S/N is a high 86 dB at the rated input. This circuit uses high quality metallic film resistors ($\pm 1\%$) and polypropylene capacitors ($\pm 2\%$) to reduce the deviation from the RIAA characteristic to less than 0.2 dB in the range 20 Hz ~ 20 kHz.

The output stage also includes an EQ subsonic filter to eliminate wow and flutter generated by the turntable.

● Straight DC switch

By using this switch, the output of the PHONO amplifier, passing through the coupling capacitor, is fed directly to the main amplifier without affecting the gain and input sensitivity, so the main amplifier operates in the STRAIGHT DC/TONE IN mode.



● Main amplifier

The main amplifier has a sufficient gain to provide 80 W (class AB, 8 ohms) of output power at 150 mV input to ensure satisfactory STRAIGHT DC operation. This full-stage DC amplifier employs a unique Marantz circuit design to minimize TIM distortion and a DC servo circuit to eliminate DC drift.

Voltage amplifier stage

The input stage uses a matched pair of dual FETs as a source follower amplifier to prevent the deterioration of the characteristics due to changes in input impedance. The low impedance signal is amplified by the dual transistor differential amplifier which forms an active load balancing circuit. The differential output is fed through the emitter follower buffer amplifier to the push-pull amplifier in the next stage.

Power amplifier stage

The power amplifier stage uses high linearity power transistors which are connected in parallel to form a 3-stage Darlington circuit.

By selecting the bias current and output voltage, the power output stage can be switched between pure class A amplification, 20W (8 ohms) and class AB amplification, 80W (8 ohms).

The use of unique Marantz push-pull and 2-pole phase compensating circuits provides excellent open-loop characteristics and distortion-free output.

- **12-point LED peak power meter**

LED peak power meters are used to indicate the output levels of the left and right channels.

The use of a logarithmic compression circuit allows monitoring of low and high output levels without the need for a level selector.

- **PLUS**

The speaker protection circuit uses high performance ICs and relays. The power supply circuit incorporates a large sized, high regulation transformer and large capacity electrolytic audio capacitors.

The power output circuit is equipped with high efficiency heat sinks to cool the power transistors, thus providing continuous high output power.

ADJUSTMENT

- **Bias current adjustment**

1. Class B (Set the front panel CLASS A button to the OFF position.)

Adjustments: RT11 and RT12 (1 k Ω)

Input:

Output: 8-ohm load

Procedure: Connect a digital voltmeter across TP1 and TP2 (L ch.) and across TP4 and TP5 (R ch.). After the terminal voltages stabilize (30 ~ 60 seconds later), adjust RT11 and RT12 until the voltmeter reads 14 mV for each channel.

2. Class A (Press the front panel Class A button to the ON position.)

Adjustments: RT07 and RT08 (4.7 k Ω)

Input:

Output: 8-ohm load

Procedure: Connect a digital voltmeter across TP1 and TP2 (L ch.) and across TP4 and TP5 (R ch.). After the terminal voltages stabilize (30 ~ 60 seconds later), adjust RT07 and RT08 until the voltmeter reads 260 mV for each channel.

- **Peak power meter adjustment**

Adjustments: RX09 and RX10 (1 k Ω)

Input: AUX

Output: 8 Ω load

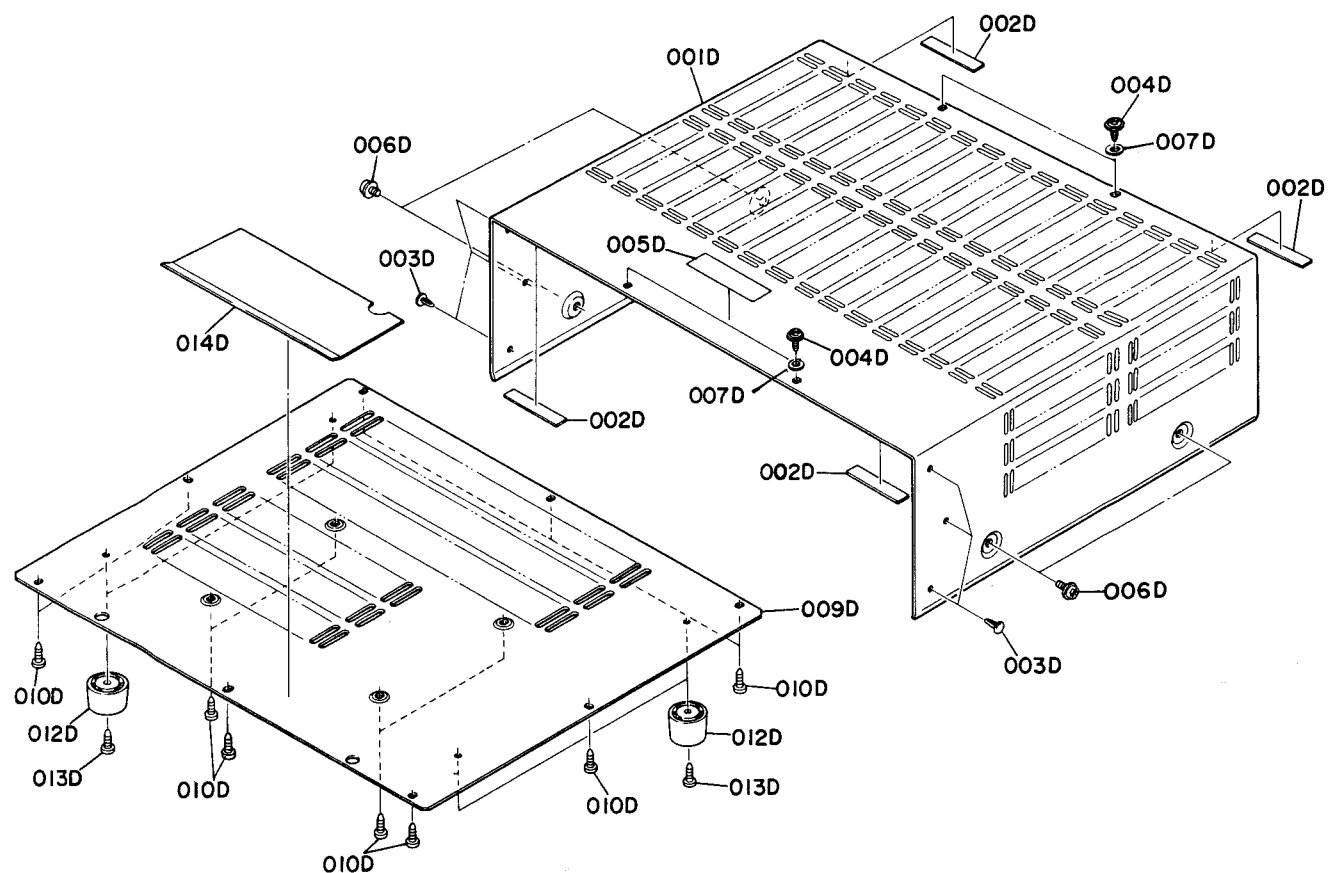
Procedure: Adjust RX09 and RX10 so both the 40 W and 80 W indicator LED's go on when the unit is delivering 50 watt output into 8 Ω load.

REQUIRED MEASURING INSTRUMENTS

Table 1. List of required measuring instruments

Item	Purpose
Distortion meter	Measures distortion in amplifier output and its voltage.
Audio frequency generator	Signal source for audio-frequency sine and square waves.
Oscilloscope	Waveform analysis and troubleshooting.
V T V M	Voltage and resistance measurement.
AC power meter	Monitors amplifier's primary power consumption.
Voltmeter	Monitors amplifier's primary supply voltage.
Slidac (0 ~ 140V AC, 10A)	Adjusts amplifier's primary supply voltage.
Shorting plug	Used to short input jacks for noise prevention.
Output load resistor (8 Ω \pm 0.5%, 250W)	Load to amplifier output (8 Ω).
Output load resistor (4 Ω \pm 0.5%, 250W)	Load to amplifier output (4 Ω).

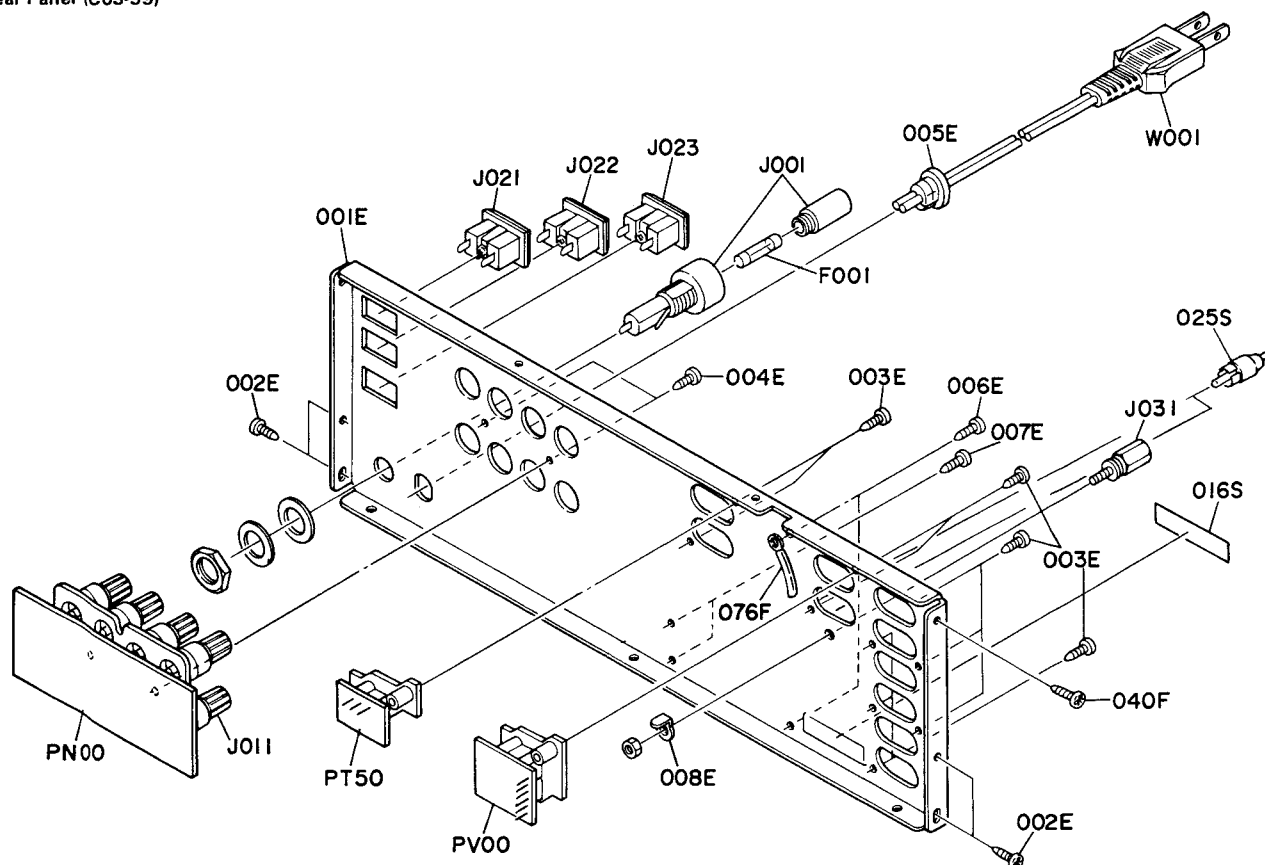
• Top Cover (C02-99)



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001D	1	2461257010	Lid, Top Cover
002D	4	2965118010	Spacer
003D	6	2991259010	Bushing
004D	4	51260308Z0	Tapped Screw 3 x 8
005D	1	2144861010	Label
006D	4	51480406Z9	F. Washer Screw 4 x 6
007D	4	59030805P1	F. Washer

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
009D	1	2141257010	Lid, Bottom Cover
010D	12	51280410U0	B.H. Tapped Screw B4 x 10
012D	4	2759057010	Leg
013D	4	51570410S0	P. Taptite Screw P4 x 10
014D	1	2141120010	Insulator

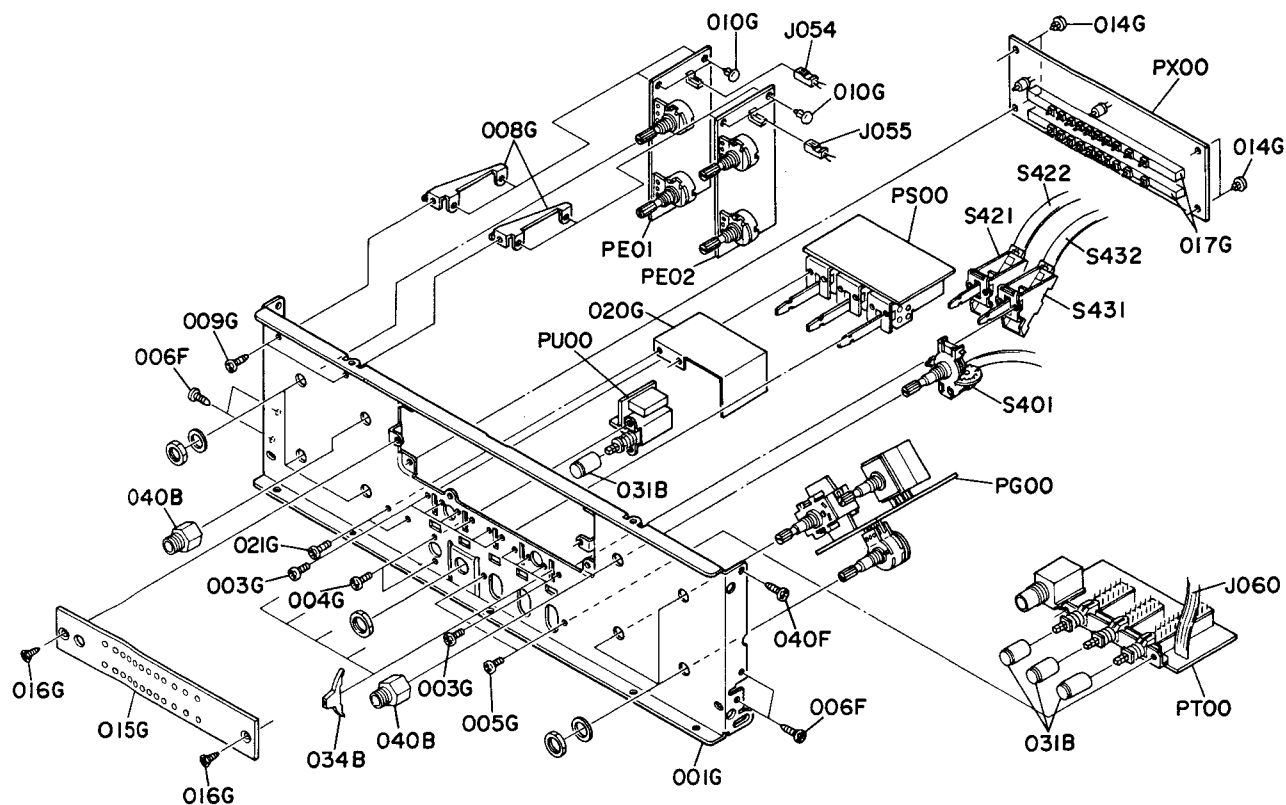
• Rear Panel (C03-99)



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001E	1	2141160210	Bracket, Rear Panel
002E	4	51100308S9	B.H.M. Screw B3 x 8
003E	10	51280308U0	B.H. Tapped Screw B3 x 8
004E	2	51280308U0	B.H. Tapped Screw B3 x 8
005E	1	1455259090	Bushing
006E	2	51280308U0	B.H. Tapped Screw B3 x 8
007E	2	51280308U0	B.H. Tapped Screw B3 x 8
008E	1	62030029W0	Lug
040F	1	51280308B0	B.H. Tapped Screw B3 x 8
025S	2	YQ01000020	Short Plug
076F	1	4220005040	Clammer

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
016S	1	2112265010	Indicator
△ F001	1	FS10500060	Fuse 5A 250V
△ J001	1	YJ08000300	Jack, Fuse Holder
J011	1	YT01080030	Terminal, Speaker System
△ J021	1	YJ04000560	Jack, AC Outlet
△ J022	1	YJ04000560	Jack, AC Outlet
△ J023	1	YJ04000560	Jack, AC Outlet
J031	1	YT01010050	Terminal, Ground
△ W001	1	YC02400180	A.C. Power Cord

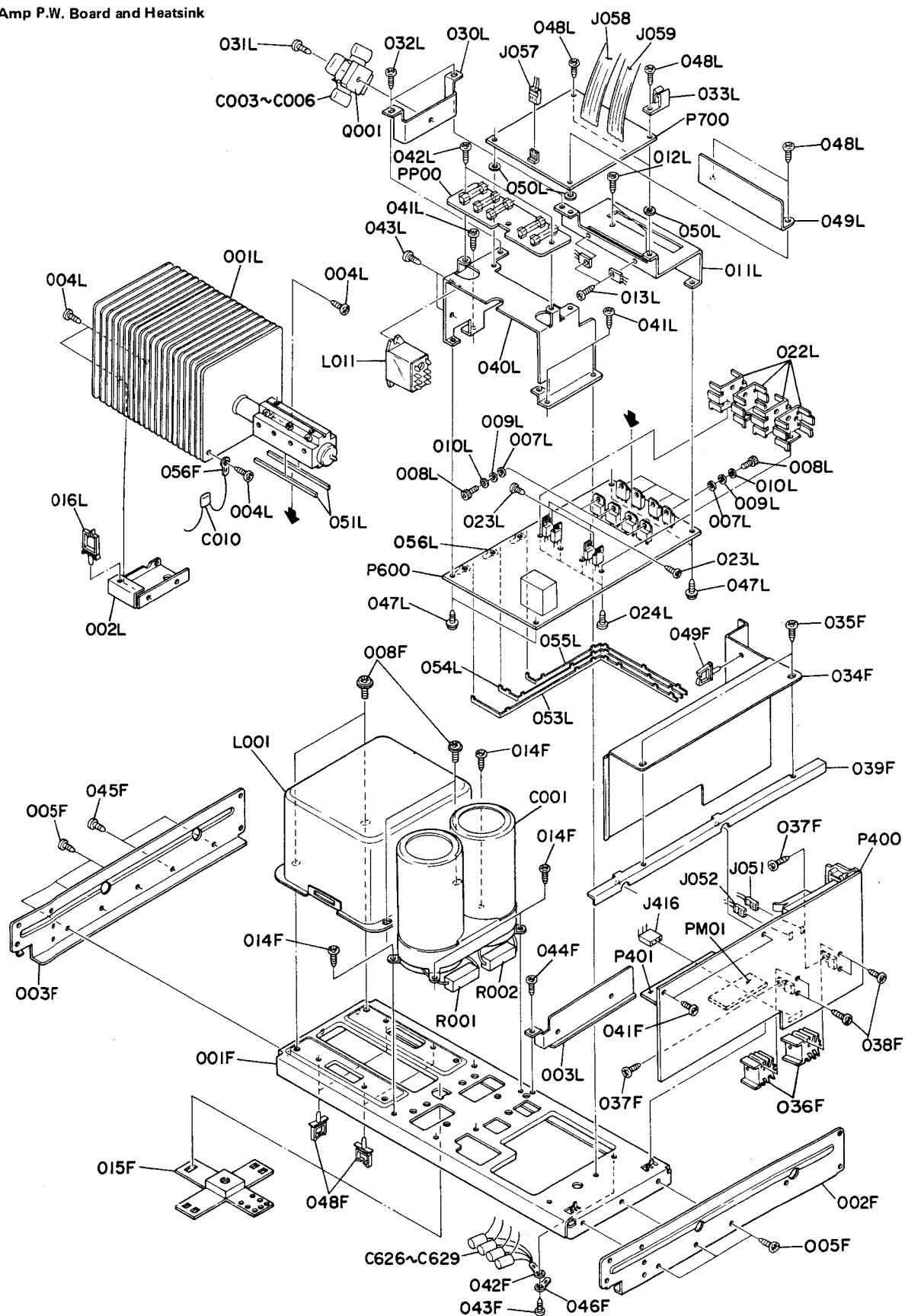
• Front Chassis and General Parts



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
031B	4	2462154220	Knob, Push Switch
034B	5	2144259010	Bushing, Lever Switch
040B	2	2462101040	Support
006F	4	51280308B0	B.H. Tapped Screw B3 x 8
040F	1	51280308B0	B.H. Tapped Screw B3 x 8
001G	1	2141160010	Bracket, Front Chassis
003G	10	51100306A9	B.H.M. Screw B3 x 6
004G	2	51100306A9	B.H.M. Screw B3 x 6
005G	2	51100306A9	B.H.M. Screw B3 x 6
008G	2	2144160030	Bracket
009G	2	51280308B0	B.H. Tapped Screw B3 x 8
010G	4	2276005050	Clamper
014G	4	2276005050	Clamper
015G	1	2141118010	Spacer
016G	2	51500306B0	F.H. Taprite Screw F3 x 6
017G	2	2142056010	Buffer
020G	1	2144109020	Shield
021G	2	51100306A9	B.H.M. Screw B3 x 6

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
S401	1	SR00050030	Rotary Switch, Phone Selector
S421	1	SC00030010	Switch, Tape Copy
S422	1	SB13970010	Switch Band, FLX
S431	1	SC00030010	Switch, Tape Monitor
S432	1	SB13670010	Switch Band, FLX
J054	1	YJ06002230	Jack (2P)
J055	1	YJ06002230	Jack (2P)
J060	1	YU05100310	Jumper Lead (5P)

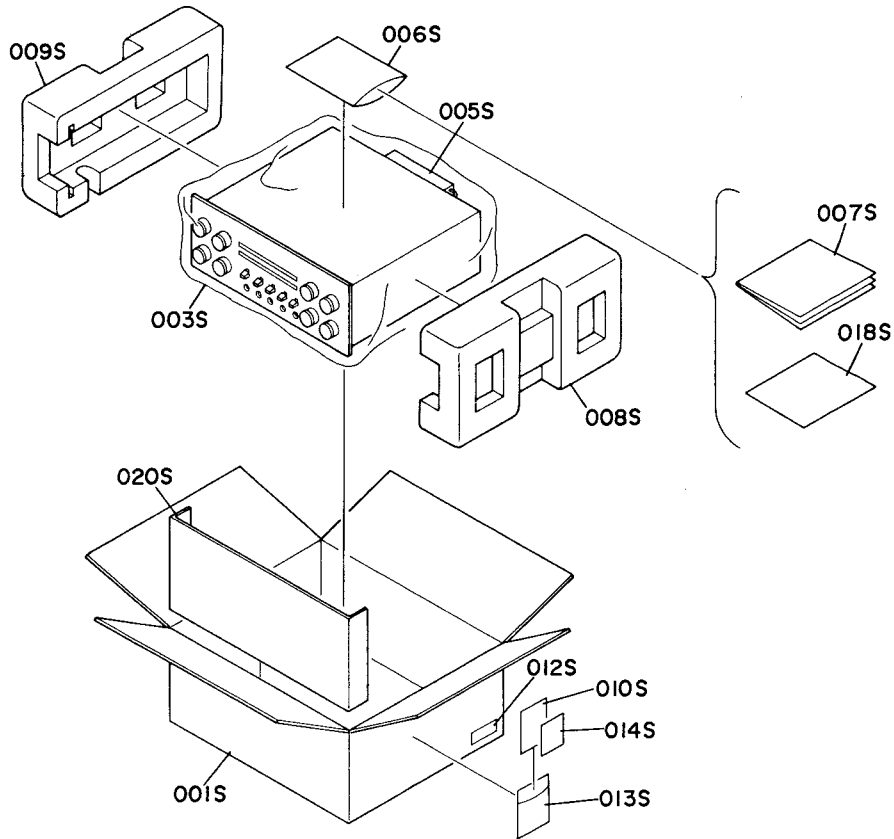
● Main Amp P.W. Board and Heatsink



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001F	1	2144105010	Chassis, Center
002F	1	2979105020	Side Chassis (R)
003F	1	2979105030	Side Chassis (L)
005F	6	51280408B0	B.H. Tapped Screw B4 x 8
008F	4	51490410S9	L. Washer Screw 4 x 10
014F	4	51280308U0	B.H. Tapped Screw B3 x 8
015F	1	2141123040	Contactactor
034F	1	2144109010	Shield
035F	2	51280308U0	B.H. Tapped Screw B3 x 8
036F	2	2144267030	Heatsink
037F	2	51280308B0	B.H. Tapped Screw B3 x 8
038F	4	51300308B0	P.H. Tapped Screw P3 x 8
039F	1	2144160080	Bracket
041F	2	51280308B0	B.H. Tapped Screw B3 x 8
042F	1	62030049W0	Lug
044F	1	51280308B0	B.H. Tapped Screw B3 x 8
045F	2	51280308B0	B.H. Tapped Screw B3 x 8
046F	1	62030039W0	Lug
043F	1	51280308B0	B.H. Tapped Screw B3 x 8
048F	4	2129005010	Clamper
049F	1	2886005060	Clamper
056F	1	62030039W0	Lug
001L	1	2141267010	Heatsink
002L	1	2144160040	Bracket
003L	1	2144160050	Bracket
004L	4	51280306B0	B.H. Tapped Screw B3 x 6
007L	8	2144259020	Bushing
008L	8	52730310S9	H.S. Head Bolt 3 x 10
009L	8	54020301E0	Fiat Washer, P.
010L	8	54040302N0	Spring Washer
011L	1	2144160070	Bracket
012L	2	51280306U0	B.H. Tapped Screw B3 x 6
013L	2	51280308U0	B.H. Tapped Screw B3 x 8
016L	1	2886005020	Clamper
022L	4	2212267020	Heatsink
023L	8	51280308B0	B.H. Tapped Screw B3 x 8
024L	4	51280308B0	B.H. Tapped Screw B3 x 8
030L	1	2144267020	Heatsink
031L	1	51280314B0	B.H. Tapped Screw B3 x 14
032L	2	51280308U0	B.H. Tapped Screw B3 x 8
033L	1	2887005110	Clamper
040L	1	2144160060	Bracket
041L	3	51280308U0	B.H. Tapped Screw B3 x 8
042L	2	51280308U0	B.H. Tapped Screw B3 x 8
043L	2	51280308U0	B.H. Tapped Screw B3 x 8
047L	4	51260308B0	Screw 3 x 8
048L	4	51280308U0	B.H. Tapped Screw B3 x 8
049L	1	2144109040	Shield
050L	4	59030808P0	Washer
051L	2	2144118010	Spacer
053L	1	2144123010	Contactactor
054L	1	2144123020	Contactactor
055L	1	2144123030	Contactactor

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
△ C001	1	E118906320	Elect Cap. 18000μF x 2 63V
C003	1	DF17104520	Film Cap. 0.1μF ±20% 200V
C004	1	DF17104520	Film Cpa. 0.1μF ±20% 200V
C005	1	DF17104520	Film Cap. 0.1μF ±20% 200V
C006	1	DF17104520	Film Cap. 0.1μF ±20% 200V
C010	1	DF16103350	Film Cap. 0.01μF ±10%
C626	1	EA10606390	Elect Cap. 10μF 63V
C627	1	EA10606390	Elect Cap. 10μF 63V
C628	1	EA10606390	Elect Cap. 10μF 63V
C629	1	EA10606390	Elect Cap. 10μF 63V
J051	1	YJ06002200	Jack (3P)
J052	1	YJ06002210	Jack (3P)
J057	1	YJ06002250	Jack (3P)
J058	1	YU08200010	Jumper Lead (8P)
J059	1	YU06200010	Jumper Lead (2P)
J416	1	YP01001040	Plug (3P)
△ L001	1	TS60508010	Power Transformer
△ L011	1	LY20480050	Relay FRL263
△ Q001	1	HD20004290	Diode S5VB-20
△ R001	1	GS10222030	Resistor 2.2KΩ ±10% 3W
△ R002	1	GS10222030	Resistor 2.2KΩ ±10% 3W

• Packing Materials



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001S	1	2141801010	Packing Case
003S	1	9090909040	Polyethylene Sheet
005S	1	2864804010	Sleeve
006S	1	9013025010	Polyethylene Bag
007S	1	2141851110	Instructions
008S	1	2139809010	Cushion (R)
009S	1	2139809020	Cushion (L)

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
010S	1	9631000110	Guarantee Card
012S	2	9526019040	Serial No. Card
013S	1	2976813020	Envelope
014S	1	2976851040	Instructions
018S	1	9650000030	S. Station Card
020S	1	2144807010	Reinforcing

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REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
P400	1	WG21410010	P400-PRE-AMP. CIRCUIT BOARD P.W. Board, Pre-Amp.
			P400-CAPACITORS
CM01	1	EA22700690	Elect 220μF 6.3V
CM02	1	EA22700690	Elect 220μF 6.3V
CM03	1	DF16152510	Film 0.0015μF ±10%
CM04	1	DF16152510	Film 0.0015μF ±10%
CM05	1	EA47701090	Elect 470μF 10V
CM06	1	EA47701090	Elect 470μF 10V
CM07	1	EA47701090	Elect 470μF 10V
CM08	1	EA47701090	Elect 470μF 10V
CM09	1	DF16222510	Film 0.0022μF ±10%
CM10	1	DF16222510	Film 0.0022μF ±10%
CM11	1	DF16222510	Film 0.0022μF ±10%
CM12	1	DF16222510	Film 0.0022μF ±10%
CM13	1	DF16222510	Film 0.0022μF ±10%
CM14	1	DF16222510	Film 0.0022μF ±10%
CM15	1	EA10602530	Elect 10μF 25V
CM16	1	EA10602530	Elect 10μF 25V
CM17	1	DF76470550	Film 47pF ±10%
CM18	1	DF76470550	Film 47pF ±10%
CM19	1	EA22602590	Elect 22μF 25V
CM20	1	EA22602590	Elect 22μF 25V
CM21	1	EA47701690	Elect 470μF 16V
CM22	1	EA47701690	Elect 470μF 16V
CM23	1	DF16152510	Film 0.0015μF ±10%
CM24	1	DF16152510	Film 0.0015μF ±10%
C401	1	DF76101550	Film 100pF ±10%
C402	1	DF76101550	Film 100pF ±10%
C403	1	EA47701090	Elect 470μF 10V
C404	1	EA47701090	Elect 470μF 10V
C405	1	EA47701090	Elect 470μF 10V
C406	1	EA47701090	Elect 470μF 10V
C407	1	DF16222510	Film 0.0022μF ±10%
C408	1	DF16222510	Film 0.0022μF ±10%
C409	1	DF16222510	Film 0.0022μF ±10%
C410	1	DF16222510	Film 0.0022μF ±10%
C411	1	EA10602530	Elect 10μF 25V
C412	1	EA10602530	Elect 10μF 25V
C413	1	DF55681090	Film 680pF ±5%
C414	1	DF55681090	Film 680pF ±5%
C415	1	DF74333010	Film 0.033μF ±2%
C416	1	DF74333010	Film 0.033μF ±2%
C417	1	DF74104010	Film 0.1μF ±2%
C418	1	DF74104010	Film 0.1μF ±2%
C419	1	DF14362010	Film 3600pF ±2%
C420	1	DF14362010	Film 3600pF ±2%
C421	1	DF64322010	Film 3200pF ±2%
C422	1	DF64222010	Film 3200pF ±2%
C423	1	DF16152510	Film 1500pF ±10%
C424	1	DF16152510	Film 1500pF ±10%
C425	1	EA22703590	Elect 220μF 35V
C426	1	EA22703590	Elect 220μF 35V
C801	1	EB10805070	Elect 1000μF 50V
C802	1	EB10805070	Elect 1000μF 50V
C803	1	DF17474510	Film 1μF ±10%
C804	1	DF17474510	Film 1μF ±10%
C805	1	DF55391090	Film 390pF ±5%
C806	1	DF55391090	Film 390pF ±5%
C807	1	EA10701030	Elect 100μF 10V

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
C808	1	EA10701030	Elect 100μF 10V
C809	1	EA10505030	Elect 1μF 50V
C810	1	EA10505030	Elect 1μF 50V
C811	1	EA22703590	Elect 220μF 35V
C812	1	EA22703590	Elect 220μF 35V
C813	1	DF17474510	Film 1μF ±10%
C814	1	DF17474510	Film 1μF ±10%
C815	1	DK18103510	Ceramic 0.01μF
C816	1	DK18103510	Ceramic 0.01μF
C817	1	DK18103510	Ceramic 0.01μF
C818	1	DK18103510	Ceramic 0.01μF
			P400-RESISTORS (All Resistors are ±5% and ¼W)
RM01	1	GD05151140	150Ω
RM02	1	GD05151140	150Ω
RM03	1	GD05151140	150Ω
RM04	1	GD05151140	150Ω
RM05	1	GD05010140	1Ω
RM06	1	GD05010140	1Ω
RM07	1	GD05471140	470Ω
RM08	1	GD05471140	470Ω
RM09	1	GD05471140	470Ω
RM10	1	GD05471140	470Ω
RM11	1	GD05752140	7.5KΩ
RM12	1	GD05752140	7.5KΩ
RM13	1	GD05752140	7.5KΩ
RM14	1	GD05752140	7.5KΩ
RM15	1	GD05150140	15Ω
RM16	1	GD05150140	15Ω
RM17	1	GD05150140	15Ω
RM18	1	GD05150140	15Ω
RM19	1	GM21447000	470Ω ±2%
RM20	1	GM21447000	470Ω ±2%
RM21	1	GM21447000	470Ω ±2%
RM22	1	GM21447000	470Ω ±2%
RM23	1	GM214270G0	27Ω ±2%
RM24	1	GM214270G0	27Ω ±2%
RM25	1	GD05680140	680Ω
RM26	1	GD05680140	680Ω
RM27	1	GD05680140	680Ω
RM28	1	GD05680140	680Ω
RM29	1	GD05472140	4.7KΩ
RM30	1	GD05472140	4.7KΩ
RM31	1	GD05272140	2.7KΩ
RM32	1	GD05272140	2.7KΩ
RM33	1	GD05332140	3.3KΩ
RM34	1	GD05332140	3.3KΩ
RM39	1	GD05101140	100Ω
RM40	1	GD05101140	100Ω
RM41	1	GD05273140	27KΩ
RM42	1	GD05273140	27KΩ
RM43	1	GA05471010	470Ω 1W
RM44	1	GA05471010	470Ω 1W
R407	1	GD05473140	47KΩ
R408	1	GD05473140	47KΩ
R409	1	GD05101140	100Ω
R410	1	GD05101140	100Ω

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R411	1	GD05102140	1K Ω
R412	1	GD05102140	1K Ω
R413	1	GD05102140	1K Ω
R414	1	GD05102140	1K Ω
R415	1	GD05822140	8.2K Ω
R416	1	GD05822140	8.2K Ω
R417	1	GD05682140	6.8K Ω
R418	1	GD05682140	6.8K Ω
R419	1	GD05822140	8.2K Ω
R420	1	GD05822140	8.2K Ω
R421	1	GD05682140	6.8K Ω
R422	1	GD05682140	6.8K Ω
R423	1	GD05151140	150 Ω
R424	1	GD05151140	150 Ω
R425	1	GD05151140	150 Ω
R426	1	GD05151140	150 Ω
R427	1	GM21456020	56K Ω $\pm 2\%$
R428	1	GM21456020	56K Ω $\pm 2\%$
R429	1	GM21456020	56K Ω $\pm 2\%$
R430	1	GM21456020	56K Ω $\pm 2\%$
R431	1	GM214390G0	39 Ω $\pm 2\%$
R432	1	GM214390G0	39 Ω $\pm 2\%$
R433	1	GD05272140	2.7K Ω
R434	1	GD05272140	2.7K Ω
R435	1	GD05272140	2.7K Ω
R436	1	GD05272140	2.7K Ω
R437	1	GD05151140	150 Ω
R438	1	GD05151140	150 Ω
R439	1	GD05151140	150 Ω
R440	1	GD05151140	150 Ω
R441	1	GD05182140	1.8K Ω
R442	1	GD05182140	1.8K Ω
R443	1	GD05272140	2.7K Ω
R444	1	GD05272140	2.7K Ω
R445	1	GD05100140	10 Ω
R446	1	GD05100140	10 Ω
R447	1	GD05100140	10 Ω
R448	1	GD05100140	10 Ω
R449	1	GD05100140	10 Ω
R450	1	GD05100140	10 Ω
R451	1	GD05100140	10 Ω
R452	1	GD05100140	10 Ω
R453	1	GM21422010	2.2K Ω $\pm 2\%$
R454	1	GM21422010	2.2K Ω $\pm 2\%$
R457	1	GD05391140	390 Ω
R458	1	GD05391140	390 Ω
R459	1	GD05224140	220K Ω
R460	1	GD05224140	220K Ω
R461	1	GG05820120	82 Ω $\frac{1}{2}W$
R462	1	GG05820120	82 Ω $\frac{1}{2}W$
R463	1	GD05561140	560 Ω
R464	1	GD05561140	560 Ω
R465	1	GD05221140	220 Ω
R466	1	GD05221140	220 Ω
R467	1	GD05221140	220 Ω
R468	1	GD05221140	220 Ω

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R801	1	GD05151140	150 Ω
R802	1	GD05151140	150 Ω
R803	1	GD05102140	1K Ω
R804	1	GD05102140	1K Ω
R805	1	GG05272120	2.7K Ω $\frac{1}{2}W$
R806	1	GG05272120	2.7K Ω $\frac{1}{2}W$
R807	1	GD05183140	18K Ω
R808	1	GD05183140	18K Ω
R809	1	GD05512140	5.1K Ω
R810	1	GD05512140	5.1K Ω
P400-SEMICONDUCTORS			
Q417	1	HT323201F0	Transistor 2SC2320(F)
Q418	1	HT323201F0	Transistor 2SC2320(F)
Q419	1	HT325912B0	Transistor 2SC2591(Q or R)
Q420	1	HT325912B0	Transistor 2SC2591(Q or R)
Q421	1	HT111112B0	Transistor 2SA1111(Q or R)
Q422	1	HT111112B0	Transistor 2SA1111(Q or R)
Q423	1	HD20011050	Diode 1S1555
Q424	1	HD20011050	Diode 1S1555
Q425	1	HD20011050	Diode 1S1555
Q426	1	HD20011050	Diode 1S1555
Q801	1	HT325912B0	Transistor 2SC2591(Q or R)
Q802	1	HT111112B0	Transistor 2SA1111(Q or R)
Q803	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q804	1	HT109702A0	Transistor 2SA970(GR or BL)
Q805	1	HF200301C0	F.E.T. 2SK30A(Y)
Q806	1	HF200301C0	F.E.T. 2SK30A(Y)
Q807	1	HT317752D0	Transistor 2SC1775A(D or E)
Q808	1	HT108722D0	Transistor 2SA872A(D or E)
Q809	1	HD30008010	Zener HZ6B1L
Q810	1	HD30008010	Zener HZ6B1L
Q811	1	HD20015030	Diode DS135D
Q812	1	HD20015030	Diode DS135D
Q813	1	HD20015030	Diode DS135D
Q814	1	HD20015030	Diode DS135D
P400-MISCELLANEOUS			
J401	1	YT02040330	Terminal (4P) RCA
J402	1	YT02040330	Terminal (4P) RCA
J403	1	YT02040330	Terminal (4P) RCA
J404	1	YP01001030	Plug (3P)
J405	1	YP01001030	Plug (3P)
J409	1	YP06001040	Plug (3P)
J414	1	YP01001030	Plug (3P)
J415	1	YP01001030	Plug (3P)
J416	1	YP01001040	Plug (3P)
S401	1	SR00050030	Rotary Switch, Phono Selector
S402	1	SS06060020	Slide Switch, Phono
S421	1	SC00030010	Switch, Tape Copy
S422	1	SB13970010	Switch Band, FLX, Tape cope
S423	1	SS04040040	Slide Switch 4-4 NS Main
S431	1	SC00030010	Switch, Tape Monitor
S432	1	SB13670010	Switch Band, FLX, Tape Monitor
S433	1	SS04040040	Slide Switch 4-4 NS Main

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
P401	1	WH21441330	P401-MM TRANSISTOR BLOCK CIRCUIT BOARD P.W. Board, MM Transistor Block
			P401-SEMICONDUCTORS
Q401	1	HF201702B0	F.E.T. 2SK170(GR or BL)
Q402	1	HF201702B0	F.E.T. 2SK170(GR or BL)
Q403	1	HF100742B0	F.E.T. 2SJ74(GR or BL)
Q404	1	HF100742B0	F.E.T. 2SJ74(GR or BL)
Q405	1	HT322401B0	Transistor 2SC2240(BL)
Q406	1	HT322401B0	Transistor 2SC2240(BL)
Q407	1	HT109701B0	Transistor 2SA970(BL)
Q408	1	HT109701B0	Transistor 2SA970(BL)
Q409	1	HT109701B0	Transistor 2SA970(BL)
Q410	1	HT109701B0	Transistor 2SA970(BL)
Q411	1	HT322401A0	Transistor 2SC2240(GR)
Q412	1	HT322401A0	Transistor 2SC2240(GR)
Q413	1	HT108722D0	Transistor 2SA872A(D or E)
Q414	1	HT108722D0	Transistor 2SA872A(D or E)
Q415	1	HT317752D0	Transistor 2SC1775A(D or E)
Q416	1	HT317752D0	Transistor 2SC1775A(D or E)
			P401-PLUGS
J412	1	YP06000750	Plug (14P)
J413	1	YP06000750	Plug (14P)
			P600-OUTPUT AMP. CIRCUIT BOARD P.W. Board, Output Amp.
P600	1	WK21441210	
			P600-CAPACITORS
C601	1	DF76100550	Film 10pF ±10%
C602	1	DF76100550	Film 10pF ±10%
C603	1	EA10602530	Elect 10μF 25V
C604	1	EA10602530	Elect 10μF 25V
C605	1	DF16104350	Film 0.1μF ±10%
C606	1	DF16104350	Film 0.1μF ±10%
C607	1	EA10606390	Elect 10μF 63V
C608	1	EA10606390	Elect 10μF 63V
C609	1	DF17104520	Film 0.1μF ±20%
C610	1	DF17104520	Film 0.1μF ±20%
C613	1	EA10505030	Elect 1μF 50V
C614	1	EA47602530	Elect 47μF 25V
C615	1	EA22601630	Elect 22μF 16V
C616	1	EA22708020	Elect 220μF 80V
C617	1	EA22708020	Elect 220μF 80V
C620	1	DK18103510	Ceramic 0.01μF
C621	1	DK18103510	Ceramic 0.01μF
C622	1	DK18103510	Ceramic 0.01μF
C625	1	DF16222350	Film 2200pF ±10%
			P600-RESISTORS (All Resistors are ±5% and ¼W)
R601	1	GD05472140	4.7KΩ
R602	1	GD05472140	4.7KΩ
R603	1	GD05153140	15KΩ
R604	1	GD05153140	15KΩ
R605	1	GD05102140	1KΩ
R606	1	GD05102140	1KΩ
R607	1	GD05683140	68KΩ
R608	1	GD05683140	68KΩ

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R609	1	GD05683140	68KΩ
R610	1	GD05683140	68KΩ
R611	1	GD05821140	820Ω
R612	1	GD05821140	820Ω
R613	1	GD05101140	100Ω
R614	1	GD05101140	100Ω
R615	1	GD05101140	100Ω
R616	1	GD05101140	100Ω
R617	1	GG05102140	1KΩ
R618	1	GG05102140	1KΩ
R619	1	GA05103010	10KΩ 1W
R620	1	GA05103010	10KΩ 1W
R621	1	GG05330140	33Ω
R622	1	GG05330140	33Ω
R623	1	GG05330140	33Ω
R624	1	GG05330140	33Ω
R625	1	GG05470140	47Ω
R626	1	GG05470140	47Ω
R627	1	GG05330140	33Ω
R628	1	GG05330140	33Ω
R629	1	GG05100140	10Ω
R630	1	GG05100140	10Ω
R631	1	GG05100140	10Ω
R632	1	GG05100140	10Ω
R633	1	GG05100140	10Ω
R634	1	GG05100140	10Ω
R635	1	GG05100140	10Ω
R636	1	GG05100140	10Ω
△ R637	1	GO10222050	0.22Ω ±10% 5W
△ R638	1	GO10222050	0.22Ω ±10% 5W
△ R639	1	GO10222050	0.22Ω ±10% 5W
△ R640	1	GO10222050	0.22Ω ±10% 5W
△ R641	1	GO10222050	0.22Ω ±10% 5W
△ R642	1	GO10222050	0.22Ω ±10% 5W
△ R643	1	GO10222050	0.22Ω ±10% 5W
△ R644	1	GO10222050	0.22Ω ±10% 5W
R645	1	GD05681140	680Ω
R646	1	GD05681140	680Ω
R647	1	GD05682140	6.8KΩ
R648	1	GD05682140	6.8KΩ
R649	1	GD05682140	6.8KΩ
R650	1	GD05102140	1KΩ
R651	1	GD05273140	27KΩ
R652	1	GD05273140	27KΩ
R653	1	GA05100030	10Ω 3W
R654	1	GA05100030	10Ω 3W
R655	1	RC10022120	2.2Ω ±10% ¼W
R656	1	RC10022120	2.2Ω ±10% ¼W
R657	1	GD05823140	82KΩ
R658	1	GD05823140	82KΩ
R659	1	GD05393140	39KΩ
R660	1	GD05104140	100KΩ
R661	1	GD05473140	47KΩ
R662	1	GD05473140	47KΩ

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R663	1	GD05274140	270K Ω
R664	1	GD05183140	18K Ω
R666	1	GD05223140	22K Ω
R667	1	GD05183140	18K Ω
R668	1	GA05152010	1.5K Ω 1W
R669	1	GG05272120	2.7K Ω 1/4W
R671	1	GA05103010	10K Ω 1W
R672	1	GA05103010	10K Ω 1W
P600-SEMICONDUCTORS			
Q601	1	HT315681S0	Transistor 2SC1568(S)
Q602	1	HT315681S0	Transistor 2SC1568(S)
Q603	1	HT110152A0	Transistor 2SA1015(Q or Y)
Q604	1	HT110152A0	Transistor 2SA1015(Q or Y)
Q605	1	HT326322R0	Transistor 2SC2632(R or S)
Q606	1	HT326322R0	Transistor 2SC2632(R or S)
Q607	1	HT111242R0	Transistor 2SA1124(R or S)
Q608	1	HT111242R0	Transistor 2SA1124(R or S)
Q609	1	HT325912B0	Transistor 2SC2591(Q or R)
Q610	1	HT111112B0	Transistor 2SA1111(Q or R)
Q611	1	HT325912B0	Transistor 2SC2591(Q or R)
Q612	1	HT111112B0	Transistor 2SA1111(Q or R)
△ Q613	1	HT407182C0	Transistor 2SD718(R or O)
△ Q614	1	HT206882C0	Transistor 2SB688(R or O)
△ Q615	1	HT407182C0	Transistor 2SD718(R or O)
△ Q616	1	HT206882C0	Transistor 2SB688(R or O)
△ Q617	1	HT407182C0	Transistor 2SD718(R or O)
△ Q618	1	HT206882C0	Transistor 2SB688(R or O)
△ Q619	1	HT407182C0	Transistor 2SD718(R or O)
△ Q620	1	HT206882C0	Transistor 2SB688(R or O)
Q621	1	HT318152A0	Transistor 2SC1815(O or Y)
Q622	1	HT318152A0	Transistor 2SC1815(O or Y)
Q623	1	HT110152A0	Transistor 2SA1015(O or Y)
Q624	1	HC10042050	IC TA7317P
Q625	1	HD20010210	Diode 1S2471G
Q626	1	HD20010210	Diode 1S2471G
Q627	1	HD20010210	Diode 1S2471G
Q628	1	HD20010210	Diode 1S2471G
Q629	1	HD20015030	Diode DS135D
Q630	1	HD20015030	Diode DS135D
Q631	1	HD20015030	Diode DS135D
Q632	1	HD20015030	Diode DS135D
Q633	1	HD20011010	Diode W06C
Q634	1	HD20011010	Diode W06C
Q635	1	HD20011010	Diode W06C
Q636	1	HD20011010	Diode W06C
Q637	1	HD20011050	Diode 1S1555
Q638	1	HD20011050	Diode 1S1555
Q639	1	HD20011050	Diode 1S1555
Q640	1	HD20011050	Diode 1S1555
Q641	1	HD20011050	Diode 1S1555
Q642	1	HD20015030	Diode DS135D
Q643	1	HD20015030	Diode DS135D
Q644	1	HD20015030	Diode DS135D
Q645	1	HD20015030	Diode DS135D
Q647	1	HD20011050	Diode 1S1555
Q648	1	HD20011050	Diode 1S1555
Q649	1	HD30064090	Zener BZ-240
P600-MISCELLANEOUS			
L601	1	LL23915120	Coil
L602	1	LL23915120	Coil
L603	1	LY20240152	Relay

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
P700	1	WK21441220	P700-VOLTAGE AMP. CIRCUIT BOARD P.W. Board, Voltage Amp.
P700-CAPACITORS			
C701	1	DF55221090	Film 220pF $\pm 5\%$
C702	1	DF55221090	Film 220pF $\pm 5\%$
C703	1	DF55221090	Film 220pF $\pm 5\%$
C704	1	DF55221090	Film 220pF $\pm 5\%$
C709	1	DF76100550	Film 10pF $\pm 10\%$
C710	1	DF76100550	Film 10pF $\pm 10\%$
C711	1	DF16474510	Film 0.47 μ F $\pm 10\%$
C712	1	DF16474510	Film 0.47 μ F $\pm 10\%$
C713	1	DF16102350	Film 0.001 μ F $\pm 10\%$
C714	1	DF16102350	Film 0.001 μ F $\pm 10\%$
C715	1	EA47701630	Elect 470 μ F 16V
C716	1	EA47701630	Elect 470 μ F 16V
C771	1	EA47602530	Elect 47 μ F 25V
C772	1	EA47602530	Elect 47 μ F 25V
C773	1	EA47601630	Elect 47 μ F 16V
C775	1	EA10706390	Elect 100 μ F 63V
C776	1	EA10706390	Elect 100 μ F 63V
C777	1	DF16102510	Film 0.001 μ F $\pm 10\%$
C778	1	DF16102510	Film 0.001 μ F $\pm 10\%$
C779	1	DF16103350	Film 0.01 μ F $\pm 10\%$
C780	1	DF15102350	Film 0.001 μ F $\pm 5\%$
C781	1	DF15102350	Film 0.001 μ F $\pm 5\%$
P700-RESISTORS (All Resistors are $\pm 5\%$ and 1/4W)			
R701	1	GD05224140	220K Ω
R702	1	GD05224140	220K Ω
R703	1	GD05102140	1K Ω
R704	1	GD05102140	1K Ω
R705	1	GD05561140	560 Ω
R706	1	GD05561140	560 Ω
R707	1	GD05561140	560 Ω
R708	1	GD05561140	560 Ω
R709	1	GD05103140	10K Ω
R710	1	GD05103140	10K Ω
R711	1	GD05103140	10K Ω
R712	1	GD05103140	10K Ω
R713	1	GD05102140	1K Ω
R714	1	GD05102140	1K Ω
R715	1	GD05102140	1K Ω
R716	1	GD05102140	1K Ω
R717	1	GD05473140	47K Ω
R718	1	GD05473140	47K Ω
R721	1	GD05101140	100 Ω
R722	1	GD05101140	100 Ω
R723	1	GD05102140	1K Ω
R724	1	GD05102140	1K Ω
R725	1	GD05154140	150K Ω
R726	1	GD05154140	150K Ω
R727	1	GD05562140	5.6K Ω
R728	1	GD05562140	5.6K Ω
R729	1	GD05181140	180 Ω
R730	1	GD05181140	180 Ω
R731	1	GD05151140	150 Ω
R732	1	GD05151140	150 Ω

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R733	1	GD05103140	10K Ω
R734	1	GD05103140	10K Ω
R735	1	GD05103140	10K Ω
R736	1	GD05103140	10K Ω
R737	1	GD05472140	4.7K Ω
R738	1	GD05472140	4.7K Ω
R739	1	GD05472140	4.7K Ω
R740	1	GD05472140	4.7K Ω
R741	1	GG05271140	270 Ω
R742	1	GG05271140	270 Ω
R743	1	GG05271140	270 Ω
R744	1	GG05271140	270 Ω
R749	1	GD05273140	27K Ω
R750	1	GD05273140	27K Ω
R751	1	GA05272010	2.7K Ω 1W
R752	1	GA05182010	1.8K Ω 1W
R753	1	GD05104140	100K Ω
R754	1	GD05104140	100K Ω
R755	1	GD05222140	2.2K Ω
R756	1	GD05222140	2.2K Ω
R757	1	GD05222140	2.2K Ω
R758	1	GD05222140	2.2K Ω
R759	1	GD05102140	1K Ω
R760	1	GD05102140	1K Ω
R761	1	GD05474140	470K Ω
R762	1	GD05474140	470K Ω
R763	1	GD05474140	470K Ω
R764	1	GD05474140	470K Ω
R771	1	GD05102140	1K Ω
R772	1	GD05102140	1K Ω
R773	1	GD05332140	3.3K Ω
R774	1	GD05332140	3.3K Ω
R775	1	GD05272140	2.7K Ω
R776	1	GD05272140	2.7K Ω
R777	1	GA05472010	4.7K Ω 1W
R779	1	GD05393140	39K Ω
R780	1	GD05393140	39K Ω
R781	1	GD05123140	12K Ω
R782	1	GD05393140	39K Ω
R783	1	GD05911140	910 Ω
P700-SEMICONDUCTORS			
Q701	1	HC10021020	IC M47F (C)
Q702	1	HC10021020	IC M47F (C)
Q703	1	HT322592F0	Transistor 2SC2259(F or G)
Q704	1	HT322592F0	Transistor 2SC2259(F or G)
Q705	1	HT109952A0	Transistor 2SA995(F or G)
Q706	1	HT109952A0	Transistor 2SA995(F or G)
Q707	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q708	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q709	1	HT109702A0	Transistor 2SA970(GR or BL)
Q710	1	HT109702A0	Transistor 2SA970(GR or BL)
Q713	1	HT109702A0	Transistor 2SA970(GR or BL)
Q714	1	HT109702A0	Transistor 2SA970(GR or BL)
Q715	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q716	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q717	1	HT111242R0	Transistor 2SA1124(R or S)
Q718	1	HT111242R0	Transistor 2SA1124(R or S)
Q719	1	HT326322R0	Transistor 2SC2632(R or S)
Q720	1	HT326322R0	Transistor 2SC2632(R or S)
Q721	1	HC10019020	IC AN6552
Q722	1	HC10019020	IC AN6552

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
Q723	1	HD30025090	Zener WZ150
Q724	1	HD30025090	Zener WZ150
Q725	1	HD20011050	Diode 1S1555
Q726	1	HD20011050	Diode 1S1555
Q727	1	HD20011050	Diode 1S1555
Q728	1	HD20011050	Diode 1S1555
Q729	1	HD20011050	Diode 1S1555
Q730	1	HD20011050	Diode 1S1555
Q771	1	HT325902B0	Transistor 2SC2590(Q or R)
Q772	1	HT111102B0	Transistor 2SA1110(Q or R)
Q773	1	HT317752D0	Transistor 2SC1775A(D or E)
Q774	1	HT108722D0	Transistor 2SA872A(D or E)
Q775	1	HT317752D0	Transistor 2SC1775A(D or E)
Q776	1	HT108722D0	Transistor 2SA872A(D or E)
Q777	1	HD30009010	Zener HZ12B2L
P700-PLUG			
J701	1	YP01001030	Plug (3P)
PE01-TONE AMP.			
CIRCUIT BOARD (L-CH)			
P.W. Board, Tone Amp. (L-Ch)			
PE01-CAPACITORS			
CE01	1	EA47503530	Elect 4.7 μ F 35V
CE03	1	DF76101550	Film 100pF \pm 10%
CE05	1	EA47601030	Elect 47 μ F 10V
CE07	1	DF76150550	Film 15pF \pm 10%
CE09	1	DF76101550	Film 100pF \pm 10%
CE11	1	DF76470550	Film 47pF \pm 10%
CE13	1	DF15563300	Film 0.056 μ F \pm 5%
CE15	1	DF15563300	Film 0.056 μ F \pm 5%
CE17	1	DF15393300	Film 0.039 μ F \pm 5%
CE19	1	DF16472350	Film 4700pF \pm 10%
CE21	1	EA47503530	Elect 4.7 μ F 35V
CE23	1	EA10702530	Elect 100 μ F 25V
CE25	1	EA10702530	Elect 100 μ F 25V
PE01-RESISTORS			
(All Resistors are \pm 5% and $\frac{1}{4}$ W)			
RE01	1	GD05684140	680K Ω
RE03	1	GD05224140	220K Ω
RE05	1	GD05331140	330 Ω
RE07	1	GD05331140	330 Ω
RE09	1	GD05182140	1.8K Ω
RE11	1	GD05224140	220K Ω
RE13	1	GD05822140	8.2K Ω
RE15	1	GD05822140	8.2K Ω
RE17	1	RK05030330	50K Ω (B), Variable
RE19	1	RK02030530	20K Ω (W), Variable
RE21	1	GD05473140	47K Ω
RE23	1	GD05391140	390 Ω
RE25	1	GD05224140	220K Ω
RE27	1	GD05182140	1.8K Ω
RE29	1	GG05332140	3.3K Ω
RE31	1	GG05332140	3.3K Ω
PE01-IC			
QE01	1	HC10011200	IC M5213L
PE01-PLUG			
JE01	1	YP10001980	Plug (2P)

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
PE02	1	WK21411820	PE02-TONE AMP. CIRCUIT BOARD (R-CH) P.W. Board, Tone Amp. (R-Ch)
CE02	1	EA47503530	PE02-CAPACITORS Elect 4.7 μ F 35V
CE04	1	DF76101550	Film 100pF $\pm 10\%$
CE06	1	EA47601030	Elect 47 μ F 10V
CE08	1	DF76150550	Film 15pF $\pm 10\%$
CE10	1	DF76101550	Film 100pF $\pm 10\%$
CE12	1	DF76470550	Film 47pF $\pm 10\%$
CE14	1	DF15563300	Film 0.056 μ F $\pm 5\%$
CE16	1	DF15563300	Film 0.056 μ F $\pm 5\%$
CE18	1	DF15393300	Film 0.039 μ F $\pm 5\%$
CE20	1	DF16472350	Film 4700pF $\pm 10\%$
CE22	1	EA47503530	Elect 4.7 μ F 35V
CE24	1	EA10702530	Elect 100 μ F 25V
CE26	1	EA10702530	Elect 100 μ F 25V
RE02	1	GD05684140	PE02-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$) 680K Ω
RE04	1	GD05224140	220K Ω
RE06	1	GD05331140	330 Ω
RE08	1	GD05331140	330 Ω
RE10	1	GD05182140	1.8K Ω
RE12	1	GD05224140	220K Ω
RE14	1	GD05822140	8.2K Ω
RE16	1	GD05822140	8.2K Ω
RE18	1	RK05030330	50K Ω (B), Variable
RE20	1	RK02030530	20K Ω (W), Variable
RE22	1	GD05473140	47K Ω
RE24	1	GD05391140	390 Ω
RE26	1	GD05224140	220K Ω
RE28	1	GD05182140	1.8K Ω
RE30	1	GG05332140	3.3K Ω
RE32	1	GG05332140	3.3K Ω
QE02	1	HC10011200	PE02-IC IC M5213L
JE02	1	YP10001980	PE02-PLUG Plug (2P)
PG00	1	WH21441310	PG00-BALANCE CONTROL CIRCUIT BOARD P.W. Board, Balance Control
RG01	1	RM01040300	PG00-RESISTORS 100K Ω x 2 Variable, Balance
RG02	1	RM01040360	100K Ω x 2 Variable
SG01	1	SR04050180	PG00-SWITCH Rotary Switch, Mode
PM01	1	WH21441320	PM01-MC TRANSISTOR BLOCK CIRCUIT BOARD P.W. Board, MC Transistor Block
RM35	1	GF05100140	PM01-RESISTORS 10 Ω $\pm 5\%$ $\frac{1}{4}W$
RM36	1	GF05100140	10 Ω $\pm 5\%$ $\frac{1}{4}W$
RM37	1	GF05100140	10 Ω $\pm 5\%$ $\frac{1}{4}W$
RM38	1	GF05100140	10 Ω $\pm 5\%$ $\frac{1}{4}W$

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
QM01	1	HT325451E0	PM01-SEMICONDUCTORS Transistor 2SC2545(E)
QM02	1	HT325451E0	Transistor 2SC2545(E)
QM03	1	HT110831E0	Transistor 2SA1083(E)
QM04	1	HT110831E0	Transistor 2SA1083(E)
QM17	1	HT108722D0	Transistor 2SA872A(D or E)
QM18	1	HT108722D0	Transistor 2SA872A(D or E)
QM19	1	HT317752D0	Transistor 2SC1775A(D or E)
QM20	1	HT317752D0	Transistor 2SC1775A(D or E)
QM21	1	HT323201F0	Transistor 2SC2320(E or F)
QM22	1	HT323201F0	Transistor 2SC2320(E or F)
QM23	1	HT406661C0	Transistor 2SD666(C)
QM24	1	HT406661C0	Transistor 2SD666(C)
QM25	1	HT206661C0	Transistor 2SB646(C)
QM26	1	HT206461C0	Transistor 2SB646(C)
J410	1	YP06000750	PM01-PLUGS Plug (14P)
J411	1	YP06000750	Plug (14P)
PN00	1	WF21440020	PN00-SPEAKER TERMINAL CIRCUIT BOARD P.W. Board, Speaker Terminal
J011	1	YT01080030	Terminal, Speaker (8P)
PP00	1	YF21440010	PP00-FUSE CIRCUIT BOARD P.W. Board, Fuse
Δ FP01 }	5	FS10050080	Fuse 0.5A 250V
Δ FP05 }	10	YJ08000170	Jack, Fuse Holder
JP01 }			
JP10			
PS00	1	WK21411840	PS00-LEVER SWITCH CIRCUIT BOARD P.W. Board, Lever Switch
CS01	1	EQ10602510	PS00-CAPACITORS Elect 10 μ F 25V
CS02	1	EQ10602510	Elect 10 μ F 25V
CS03	1	DF15683350	Film 0.068 μ F $\pm 5\%$
CS04	1	DF15683350	Film 0.068 μ F $\pm 5\%$
CS05	1	DF16105510	Film 1 μ F $\pm 10\%$
CS06	1	DF16105510	Film 1 μ F $\pm 10\%$
RS01	1	GD05822140	PS00-RESISTORS 8.2K Ω $\pm 5\%$ $\frac{1}{4}W$
RS02	1	GD05822140	8.2K Ω $\pm 5\%$ $\frac{1}{4}W$
SS01	1	SC04020170	PS00-SWITCHES Switch, ESL-374
SS02	1	SC02020370	Switch, EQ, Subsonic
SS03	1	SC02020370	Switch, Loudness

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
PT00	1	WK21411850	PT00-SPEAKER SWITCH CIRCUIT BOARD P.W. Board, Speaker Switch
CT01	1	EA33703530	PT00-CAPACITOR Elect 330 μ F 35V
RT01	1	GD05153140	PT00-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$) 15K Ω
RT02	1	GD05153140	15K Ω
RT03	1	GD05333140	33K Ω
RT04	1	GD05333140	33K Ω
RT05	1	GD05102140	1K Ω
RT06	1	GD05102140	1K Ω
RT07	1	RA05020130	4.7K Ω (B), Trimming
RT08	1	RA05020130	4.7K Ω (B), Trimming
RT09	1	GD05101140	100 Ω
RT10	1	GD05101140	100 Ω
RT11	1	RA01020150	1K Ω (B), Trimming
RT12	1	RA01020150	1K Ω (B), Trimming
RT13	1	GD05221140	220 Ω
RT15	1	GD05331120	330 Ω $\frac{1}{4}W$
RT16	1	GD05331120	330 Ω $\frac{1}{4}W$
RT17	1	GD05752140	7.5K Ω
RT18	1	GD05752140	7.5K Ω
RT19	1	GD05471140	470 Ω
RT20	1	GD05471140	470 Ω
QT01	1	HD20015030	PT00-DIODE Diode DS135-D
JT01	1	YJ01001340	PT00-MISCELLANEOUS Jack, Headphone
ST01	1	SP06030160	Push Switch, Speaker
PT50	1	WK21411870	PT50-PRE OUT CIRCUIT BOARD P.W. Board, Pre Out
JT51	1	YT02020220	Terminal (2P) RCA
PU00	1	WK21411880	PU00-POWER SWITCH CIRCUIT BOARD P.W. Board, Power Switch
△ GU01	1	BF10400030	Cap. Comp. 0.1 μ F + 120 Ω
△ SU01	1	SP01010320	Push Switch, Power
PV00	1	WK21411860	PV00-PHONO INPUT CIRCUIT BOARD P.W. Board, Phono Input
CV01	1	DK18473320	Ceramic Cap. 0.047 μ F
CV02	1	DK18473320	Ceramic Cap. 0.047 μ F
JV01	1	YT02040320	Terminal (4P) RCA

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
PX00	1	WK21411830	PX00-PEAK INDICATOR CIRCUIT BOARD P.W. Board, Peak Indicator
CX01	1	EE10505040	PX00-CAPACITORS Elect 1 μ F 50V
CX02	1	EE10505040	Elect 1 μ F 50V
CX03	1	DF16223300	Film 0.022 μ F $\pm 10\%$
CX04	1	DF16223300	Film 0.022 μ F $\pm 10\%$
CX05	1	DF16474510	Film 0.47 μ F $\pm 10\%$
CX06	1	EA10702530	Elect 100 μ F 25V
RX01	1	GD05334140	PX00-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$) 330K Ω
RX02	1	GD05334140	330K Ω
RX03	1	GG05391120	390 Ω $\frac{1}{4}W$
RX04	1	GA05101010	100 Ω 1W
RX05	1	GD05822140	8.2K Ω
RX06	1	GD05822140	8.2K Ω
RX07	1	GD05102140	1K Ω
RX08	1	GD05102140	1K Ω
RX09	1	RA01020150	1K Ω (B), Trimming
RX10	1	RA01020150	1K Ω (B), Trimming
RX11	1	GD05563140	56K Ω
RX12	1	GD05563140	56K Ω
RX13	1	GD05682140	6.8K Ω
RX14	1	GD05682140	6.8K Ω
RX15	1	GD05473140	47K Ω
RX16	1	GD05473140	47K Ω
RX17	1	GD05104140	100K Ω
RX18	1	GD05104140	100K Ω
RX19	1	GD05102140	1K Ω
RX20	1	GD05102140	1K Ω
RX21	1	GD05472140	4.7K Ω
RX22	1	GD05472140	4.7K Ω
RX23	1	GG05222120	2.2K Ω
QX01	1	HC10002380	PX00-SEMICONDUCTORS IC μ AA170
QX02	1	HC10002380	IC μ AA170
QX03	1	HC10041050	IC TA7318P-2
QX04	1	HI10004030	L.E.D. SLP-132B
QX05	1	HI10004030	L.E.D. SLP-132B
QX07	1	HD20011050	Diode 1S1555
QX08	1	HD20011050	Diode 1S1555
QX09	1	HD20011050	Diode 1S1555
QX10	1	HD20011050	Diode 1S1555
QX11	1	HI10017020	L.E.D. LN36BP LCF

規格

Model Pm-5

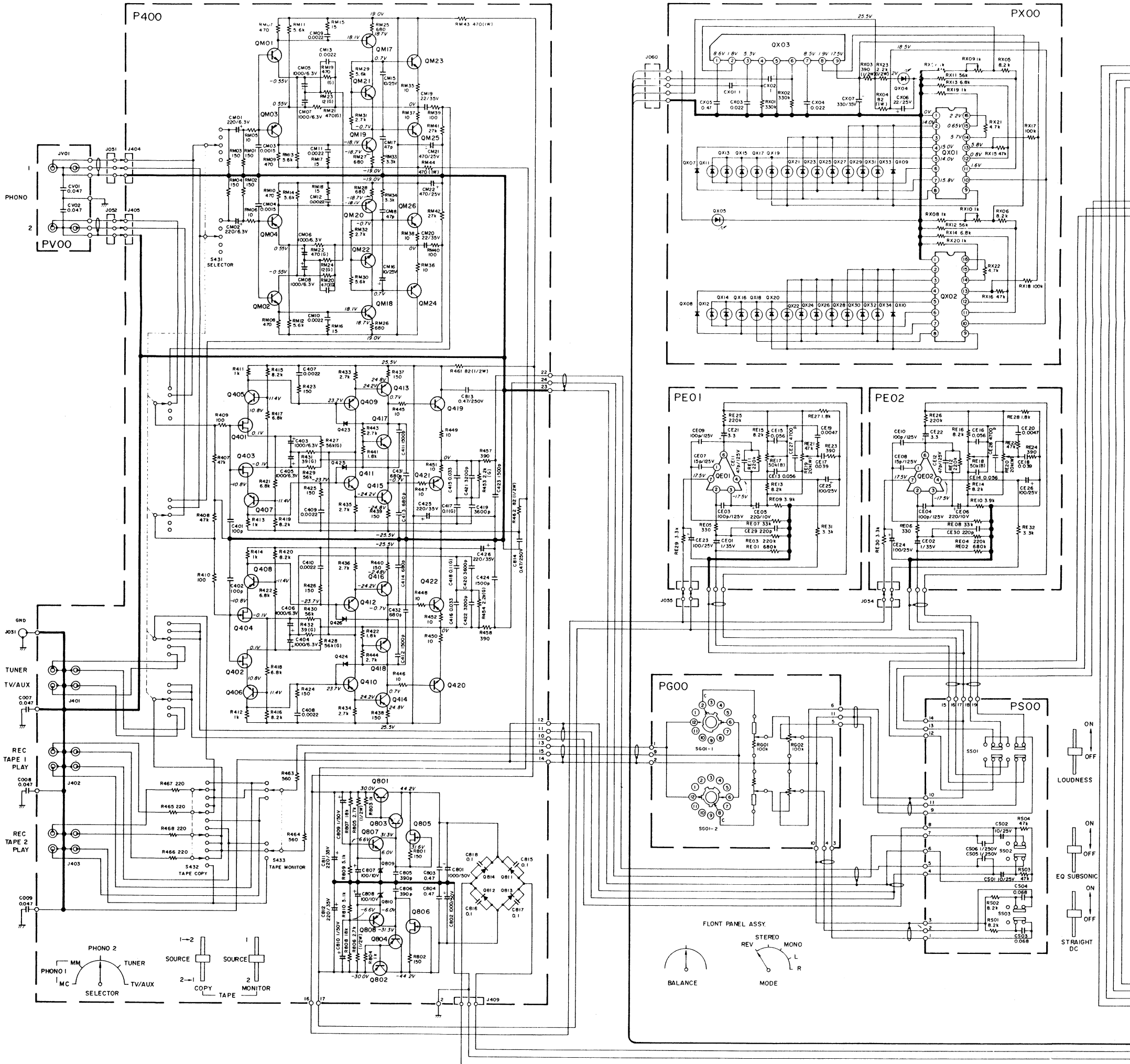
定格出力(20Hz～20kHz両ch同時駆動)	80W×2(8Ω負荷)	CLASS AB
	20W×2(8Ω負荷)純	CLASS A
出力帯域幅(8Ω負荷、THD0.05%)		5Hz～90kHz
全高調波歪率(20Hz～20kHz、8Ω負荷)		0.015%
混変調歪率		0.015%
周波数特性(20Hz～20kHz)		+0、-0.2dB
(5Hz～100kHz)		+1、-1dB
ダンピングファクター		100
入力感度およびインピーダンス		
フォノ1(MM)		2.2mV/47kΩ
フォノ1(MC)		220μV/75Ω
フォノ2(MM)		2.2mV/47kΩ
高レベル		150mV/40kΩ
RIAA偏差(20Hz～20kHz)		±0.2dB
入力等化雑音(フォノ・IHF-A)		0.24μV
S/N(IHF-Aネットワーク)フォノMM		86dB
フォノMC		68dB
テープ・チューナー・AUX		110dB
フォノ最大許容入力・フォノMM		220mV.1kHz
フォノMC		20mV.1kHz
トーンコントロール特性(低域100Hz)		±8dB
(高域10kHz)		±8dB
その他		
電源		100V 50/60Hz
消費電力(電気用品取締法)		200W
外形寸法(幅×高さ×奥行き)		416×146×332mm
重量(セット単体)		13kg

本機の規格および外観は改良のため予告なく変更することがありますが、ご了承ください。

NOTES.

回路図

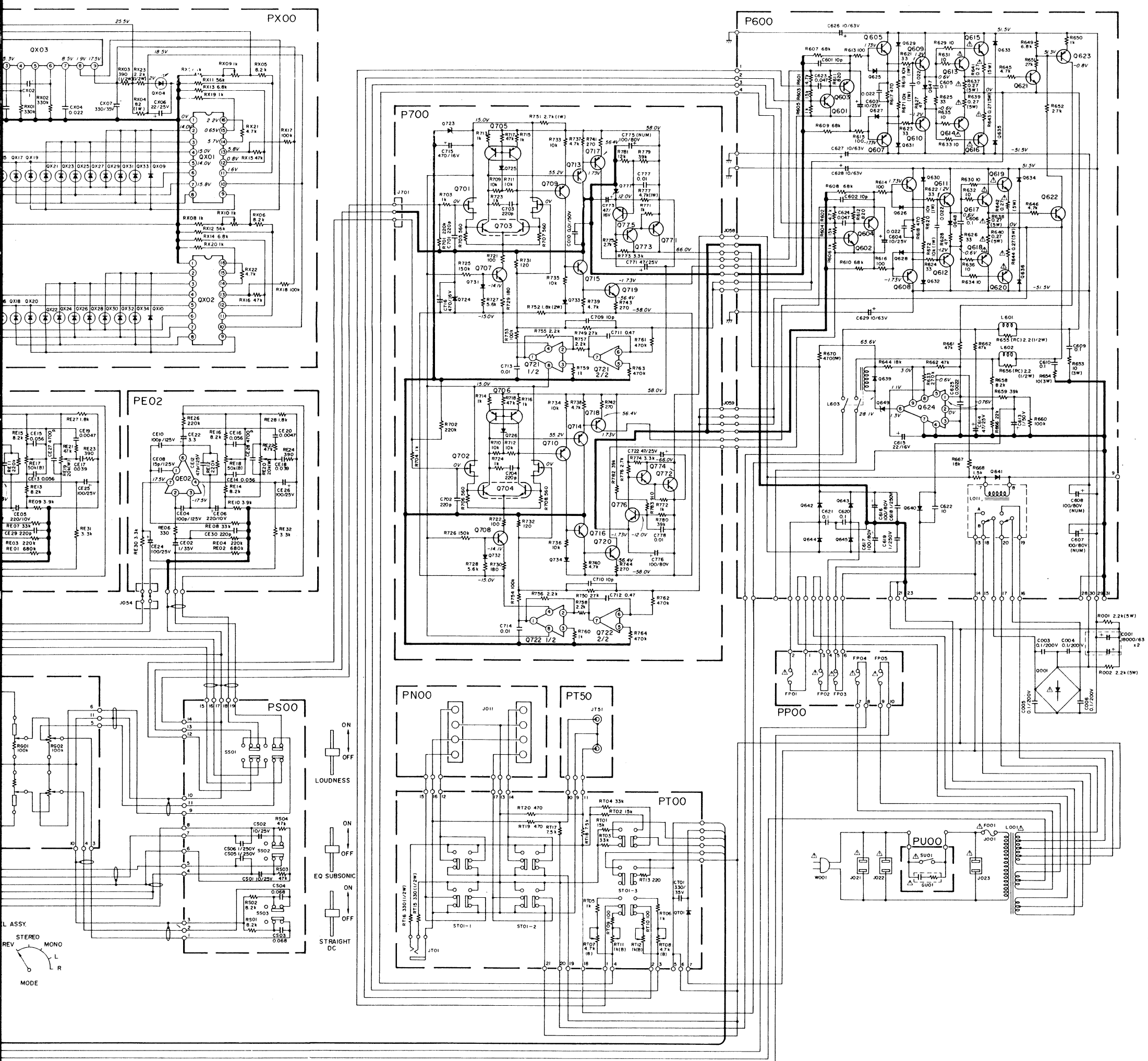
Q401, Q402 2SK170(GR or BL)	Q407, Q408, Q409, Q410 2SA970(GR or BL)	Q417, Q418 2SC2320(F)	Q423 ~ Q426 IS1555	QMI7, QMI8 2SA872A(D or E)	QM23, QM24 2SD666C	Q801 2SC2591 (Q or R)	Q804 2SA970 (GR or BL)	Q808 2SA872A (D or E)	QEO1, QEO2 M5213L	QX03 TA7318P	QX11 ~ QX28 LN36BP	Q701, Q702 M47F(C)	Q707, Q708, Q715, Q716 2SC2240(GR or BL)
Q403, Q404 2SJ74(GR or BL)	Q413, Q414 2SA872A(D or E)	Q419, Q420 2SC2591(Q or R)	QMO1, QMO2 2SC2545(E)	QMI9, QMI20 2SC1775A(D or E)	QM25, QM26 2SB646C	Q802 2SA1111 (Q or R)	Q805, Q806 2SK30A(Y)	Q809, Q810 HZ681L	QX01, QX02 UAA170	QX04, QX05 SLP132B	QX29 ~ QX34 LN26RP	Q703, Q704 2SC2259(F or G)	Q709, Q710, Q713, Q714 2SA970(GR or BL)
Q405, Q406, Q411, Q412 2SC2240(GR or BL)	Q415, Q416 2SC1775A(D or E)	Q421, Q422 2SA1111(Q or R)	QMO3, QMO4 2SA1083(E)	QMI21, QMI22 2SC2320		Q803 2SC2240 (GR or BL)	Q807 2SC1775A (D or E)	Q811, Q814 DS135D		QX07 ~ QX10 IS1555		Q705, Q706 2SA995 (For G)	



(安全上の注意: △が付いている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用してください。)
 本機の回路は改良のため予告なく変更することがありますが、ご了承ください。

Model Pm-5

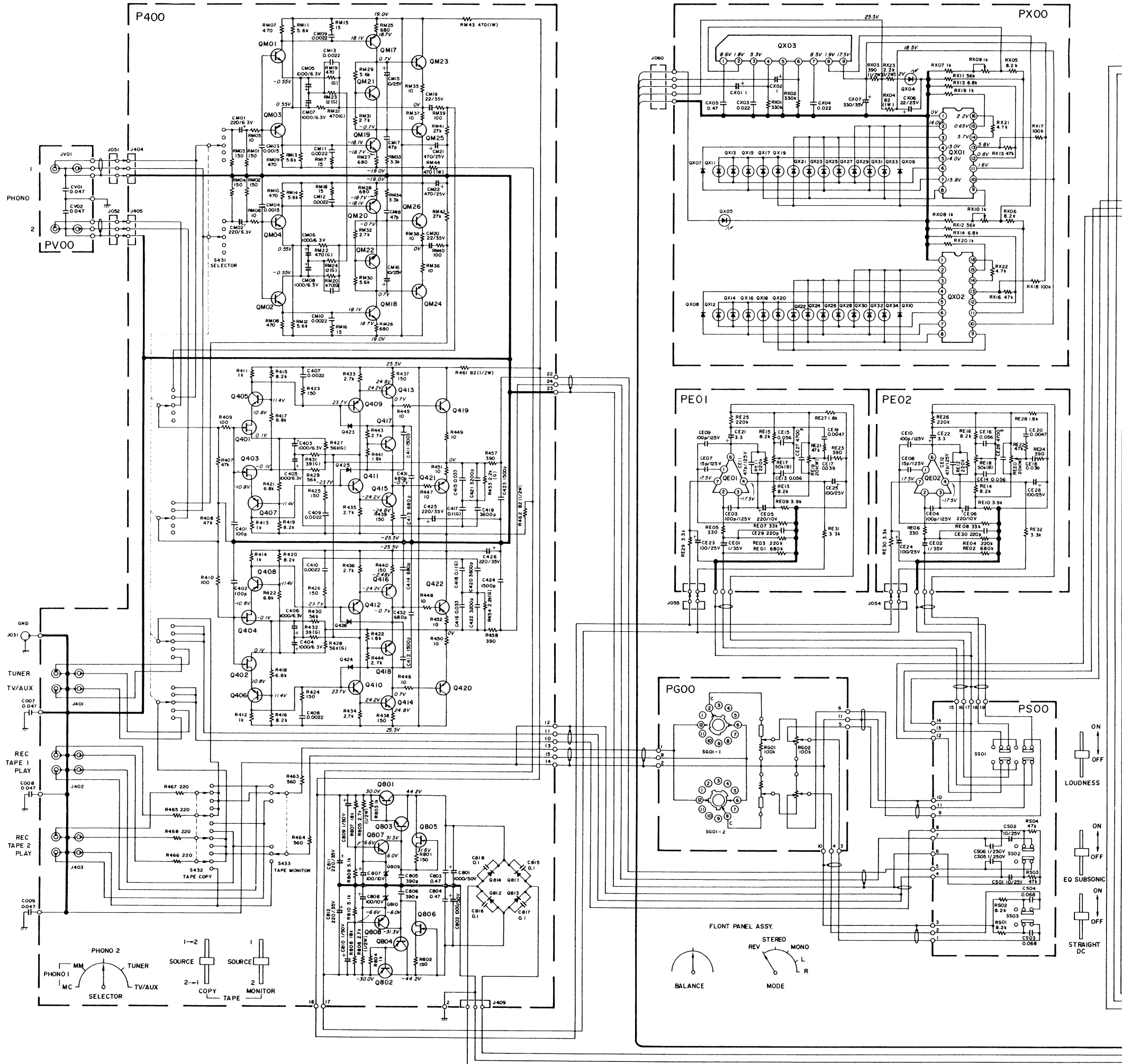
QE01, QE02 M5213L	QX03 TA7318P	QX11~QX28 LN36BP	Q701, Q702 M477(C)	Q707, Q708, Q715, Q716 2SC2240(GR or BL)	Q717, Q718 2SA1124 (R or S)	Q723, Q724 WZ150	Q772 2SA1110	Q601, Q602 2SC156B (S)	Q605, Q606 2SC2632 (R or S)	Q610, Q612 2SA1111 (Q or R)	Q621, Q622 2SC1815 (O or Y)	Q629 ~ Q632, Q642 ~ Q645 DS1350	Q649 BZ-240
QX01, QX02 UAA170	QX04, QX05 SLP132B	QX29~QX34 LN26RP	Q703, Q704 2SC2259 (F or G)	Q709, Q710, Q713, Q714 2SA970 (GR or BL)	R719, R720 2SC2632 (R or S)	Q725 ~ Q730 1S1555	Q773, Q775 2SC1775A	Q603, Q604, Q623 2SA1015 (O or Y)	Q607, Q608 2SA1124 (R or S)	Q613, Q615, Q617, Q619 2SD718 (R or O)	Q624 TA7317P	Q633 ~ Q636 W06C	
	QX07~QX10 1S1555		Q705, Q706 2SA995 (F or G)		Q721, Q722 AN6552 (455B)	Q771 2SC2590	Q774 2SA872A		Q609, Q611 2SC2591 (O or R)	Q614, Q616, Q618, Q620 2SB688 (R or O)	Q625 ~ Q628 1S2471G	Q639 ~ Q641, Q647, Q648 1S1555	



部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用してください。
 変更することがありますが、ご了承ください。

SCHEMATIC DIAGRAM

Q401, Q402 2SK170(Gr or BL)	Q407, Q408, Q409, Q410 2SA970(Gr or BL)	Q417, Q418 2SC2320(F)	Q423 ~ Q426 1S1555	QMI7, QMI8 2SA872A(D or E)	QMI9, QMI20 2SC1775A(D or E)	QMI21, QMI22 2SC2320	QMI23, QMI24 2SD666C	QMI25, QMI26 2SB646C	Q801 2SC2591 (Q or R)	Q802 2SA1111 (Q or R)	Q803 2SC2240 (Gr or BL)	Q804 2SA970 (Gr or BL)	Q805, Q806 2SK30A (Y)	Q807 2SC1775A (D or E)	Q808 2SA872A (D or E)	Q809, Q810 HZ6B1L	Q811, Q814 DS135D	QEO1, QEO2 M5213L	QX01, QX02 UAA170	QX03 TA7318P	QX04, QX05 SLP132B	QX07 ~ QX10 1S1555	QX11 ~ QX28 LN36BP	QX29 ~ QX34 LN26RP	Q701, Q702 M47F (C)	Q703, Q704 2SC2259 (F or G)	Q705, Q706 2SA995 (For G)	Q707, Q708, Q715, Q716 2SC2240 (Gr or BL)	Q709, Q710, Q713, Q714 2SA970 (Gr or BL)
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Note on safety: The parts marked with Δ are important parts on the safety. Please use the parts having the designated parts number without fail.

Components and wiring are subject to change for modification without notice.

Model Pm-5

Q7, Q708, Q715, Q716 2240 (GR or BL)	Q717, Q718 2SA1124 (R or S)	Q723, Q724 WZ150	Q772 2SA1110	Q601, Q602 2SC1568 (S)	Q610, Q612 2SA1111 (Q or R)	Q621, Q622 2SC1815 (Q or Y)	Q629 ~ Q632, Q642 ~ Q645 DS1350	Q649 BZ-240
Q9, Q710, Q713, Q714 970 (GR or BL)	R719, R720 2SC2632 (R or S)	Q725 ~ Q730 1S1555	Q773, Q775 2SC1775A	Q603, Q604, Q623 2SA1015 (Q or Y)	Q607, Q608 2SA1124 (R or S)	Q624 TA7317P	Q633 ~ Q636 W06C	
	Q721, Q722 AN6552 (4558)	Q771 2SC2590	Q774 2SA872A	Q609, Q611 2SC2591 (Q or R)	Q613, Q615, Q617, Q619 2SD718 (R or O)	Q625 ~ Q628 1S2471G	Q639 ~ Q641, Q647, Q648 1S1555	

